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The Newspaper of the Industry

Air Conditioning & Refrigeration News

Production Tools for Victory

AN INTERNATIONAL INSTITUTION — SUBSCRIBERS ALL OVER THE WORLD

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'Written To Be Read on Arrival'

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Tentative Plans Made For 2nd Victory Meeting

Cincinnati Proposed As Site of Midwest Session on Oct. 26

EVANSVILLE, Ind. — Tentative plans for a big midwestern meeting of the "Victory Program" of the Refrigeration and Air Conditioning Industry to be held Oct. 26 in Cincinnati were announced last week by the Victory Program Committee, headed by John K. Knighton, Director of the Program.

George F. Taubeneck, editor and publisher of AIR CONDITIONING & REFRIGERATION NEWS, will serve as general chairman of the Cincinnati meeting, with the following as co-chairmen:

John Wyllie, Jr., general manager of Temprite Products Co., and president, Refrigeration Equipment Manufacturers Association; Alex H. Holcombe, Jr., president, Victor Sales & Supply Co., Philadelphia, and president, National Refrigeration Supply Jobbers Association; E. A. Plesskott, St. Louis, president, Refrigeration Service Engineers Society; Frank Smith, sales manager, Tecumseh Products Co., president, Standard Compressor Manufacturers Association; Paul B. Zimmerman, vice president, Airtemp division, Chrysler Corp.; C. V. Hill, Jr., president, C. V. Hill & Co., Inc.

Among the speakers will be Mr. Knighton, Mr. Taubeneck, Mr. Zimmerman, A. B. Schellenberg, president, Alco Valve Co.; Henry Dinegar, War Production Board (who recently returned from making a study of how the English government worked out concentration - for - industries plans), and possibly others.

The Victory Program committee, said Mr. Knighton, is asking for com-

(Concluded on Page 4, Column 4)

Utilities Can Make Range Connections In Certain Cases

WASHINGTON, D. C., Sept. 25—A supplement to preference rating order P-46 was issued today to give blanket permission to utilities to make gas or electric service connections for the operation of a gas or electric range in certain circumstances where connections were formerly prohibited except upon specific authorization.

Under P-46 as previously written, no utility was permitted to make extensions for a new consumer unless the dwelling was wired or piped and ready for service prior to July 1, 1942, or in the case of a new house where the foundation was completed prior to July 1, 1942.

Today's supplement is intended to take care of a person who moves into a house which was not wired or piped for range service prior to July 1, 1942, and which is not equipped with a range of any kind. In that event, the amendment permits either

(Concluded on Page 4, Column 4)

Refrigerated Storage Space Is 'Pinched' by Wartime Demands

ODT Statement Reveals Fears For the Future

WASHINGTON, D. C.—Warning that a "pinch" impends in refrigerated storage space required to preserve stocks of perishable foods for the war effort, the Office of Defense Transportation last week appealed to operators and users of refrigerated warehouses to utilize cold storage facilities as efficiently as possible.

ODT officials called attention to the fact that the war had produced the greatest demand for refrigerated space in the history of the industry at a time when scarcity of critical materials prevented any considerable physical expansion.

With the period of autumn peak demands approaching, the ODT announced that total current occupancy of refrigerated warehouses is not materially greater than the percentage of occupancy a year ago but that anticipated demand for space shows a marked increase. The problem is to coordinate the use of storage and transportation facilities in such a way that refrigerated storage space will be available to various sections of the country at the times it is needed. Shortages of space may develop in one area while warehouse space elsewhere is idle.

Specifically, ODT predicted, New England, the Hudson River Valley, and the Virginia-Maryland areas may expect a shortage of cooler space—space maintained at a temperature of about 30°—for storage of large fruit crops, especially apples; the Pacific Coast and Mississippi Valley from Canada to Texas probably will see a shortage of freezer space—zero and below—to store meats and poultry; and the Boston area may be squeezed for freezer facilities needed to store fish.

The vital role which refrigerated warehousing must play in the war requires that the entire cycle of production, transportation, processing and storage be highly coordinated and synchronized, the ODT declared.

Storage points for various products must bear a direct relation to the end-use or ultimate destination, the office said. Products to be processed should be stored in warehouses best situated in respect to processing plants, and products already processed and packed for market distribution or export should be stored at storage-in-transit and terminal points.

Apples and other fruit for domestic use should be largely stored at or near points of production and shipped into the large markets to meet current requirement. This will leave terminal warehouses and transit points on the main lines of transportation available for the storage and handling of a wide range of other products.

Concentration of holdings should be avoided and a broad distribution planned. The result, ODT pointed out, will be better protection, less congestion and unnecessary burden on transportation and storage facilities, prevention of deterioration, spoilage and waste of perishable foods, and

(Concluded on Page 16, Column 2)

N. Y. Board Declares Salesmen Should Get Unemployment Aid

NEW YORK CITY—Salesmen are regular employes of a corporation even though they work on a commission basis only and they are therefore eligible for state unemployment insurance, according to a decision just handed down by the Unemployment Insurance Appeal Board of the New York State Department of Labor.

Given in the case of Samuel R. Weinberg, a former salesman for Electrolux Corp., manufacturers and distributors of electric vacuum cleaners, the decision was expected to have widespread application.

Weinberg held upon leaving his position that he was entitled to unemployment insurance. Inquiry disclosed that his employer had not credited him with his earnings and had not reported them to the state. The corporation maintained that Weinberg and the hundreds of others similarly employed were independent contractors and therefore not subject to the unemployment insurance law.

A ruling in Weinberg's favor was given by a referee on June 19, 1941, after which the case was carried to the appeal board by the corporation. Also deciding in Weinberg's favor, the appeal board, headed by John E. McGarry, stated that "claimant was an employe of the appellant and is entitled to be credited with his earnings in the amounts filed by the referee." As authority for its ruling, the board cited a State Court of Appeals decision handed down last July in two similar cases.

Wilson of G-E Is U.S. Production Chief

WASHINGTON, D. C.—Charles E. Wilson, president of the General Electric Co., is the new vice chairman of the War Production Board, where he will serve as chairman of the newly organized production executive committee, and will exercise the powers of the Chairman of the War Production Board in seeing to it that production programs are met.

"Mr. Wilson will be the top production authority in the war program and will have the responsibility of seeing to it that programs and schedules for all phases of our war effort are met," Mr. Nelson said. "I am very glad that we have been able to enlist his services, and I know that he will make a great contribution to the war program."

At a special meeting of the board of directors of the General Electric Co. on Sept. 18, Mr. Wilson's resignation as president and director was regretfully accepted. Chairman Philip D. Reed is also in the service of the government. Honorary Chair-

(Concluded on Page 13, Column 4)

Gas Unit Heaters Are No Longer Restricted

WASHINGTON, D. C.—Restrictions on production of gas unit heaters, adaptable for economical heating of war plants, were removed Sept. 19 by the War Production Board.

In an amendment (No. 1) to General Limitation Order L-173, the WPB excepted from provisions of the order the production limitations previously imposed on gas unit heaters. L-173, issued Aug. 5, curtailed production of domestic space heaters using fuel oil or gas.

Unit gas heaters use less critical materials than other types in relation to their heating capacity and are particularly effective in heating large floors or sheds. In view of

(Concluded on Page 13, Column 5)

ATTENTION - - *If You Do Service Work*

Worthy of the special attention of any reader who has any connection with service work are two articles in this week's issue of the News. On pages 6 and 7 is a description—complete with illustrations of the forms—of a system for accounting control and analysis of operations in a service business. On page 10 is the start of an authorized series of "picture articles" describing the fundamentals in the servicing of the General Electric "Scotch Yoke" type of household refrigerating machines.

Amendment 4 To L-38 Stops All Production of Some Types of Equipment, Releases More Stocks

Display & Vegetable Case Stocks Main Items To Be Released

WASHINGTON, D. C.—Amendment No. 4 to Limitation Order L-38, effective Sept. 26, stops all sales of certain commercial refrigeration and air conditioning equipment to all but the Armed Services and government agencies, but at the same time releases stocks of various items in the hands of dealers (and some stocks in the hands of manufacturers) for sale without restriction.

Items in the hands of dealers and "other authorized channels of distribution" which are unfrozen for sale without restriction include: Carbonated beverage dispensers, mechanical bottled beverage coolers, low temperature mechanical refrigerators having a net capacity of 8 cu. ft. or less, self-contained air conditioners (under 2 hp.), soda fountains of the fountainette type, florist boxes, ice cream cabinets, nonmechanical water coolers, evaporative coolers rated at 2,000 c.f.m. or less, all refrigerated display cases, farm freezer cabinets under 24-cu. ft. capacity.

The effect of Amendment No. 4 in general terms is as follows:

It stops all manufacture of nonmechanical water coolers having an ice capacity of less than 25 pounds, refrigerated display cases of all types, and low temperature mechanical refrigerators having a net capacity of more than 8 cu. ft. but not over 24 cu. ft. and used for the freezing and storage of food on the farm (farm freezers). (Under the order prior to this amendment, such items could be produced for Preferred Orders in restricted quantities).

The amendment also stops all

(Concluded on Page 4, Column 1)

OPA Cracks Down On Violators of Used Box Prices

DETROIT—A "black market" in used household electric refrigerators has been discovered throughout Michigan, the local branch of the Office of Price Administration declared last week, and officials made the pronouncement that "the period of education is over, and the time for enforcement is now at hand."

"One prosecution already has been ordered," stated Samuel B. Ostrow, complaint attorney of the Detroit OPA office, "and more are expected. Meanwhile, we have ordered the refund of thousands of dollars in connection with illegal sales.

"Purchasers have recourse in civil action. On purchases made since Aug. 1, a purchaser who has been overcharged may sue for three times the amount of any overcharge, or for $50, whichever sum may be the greater."

Mr. Ostrow said that in the workings of the "black market" those operating it had advertised throughout Michigan for used refrigerators, purchasing them from individuals, and then selling them at amounts as high as $175 on refrigerators which had a ceiling price of $40.

Then the ultimate sale to the consumer was frequently made from homes under circumstances which would make the purchaser think he was buying from an individual not bound by ceiling prices. The market has been so brisk for such transactions, Mr. Ostrow said, that there have been cases of dealers buying from dealers, each not knowing that

(Concluded on Page 16, Column 2)

Mechanical Refrigeration Unit Used In New 'Cold' Anesthesia

PITTSBURGH—An improved method of shockless amputation, which is accomplished by chilling a leg or an arm in a mechanically refrigerated cabinet rather than using a general anesthetic, was described before the recent American Congress of Physical Therapy meeting here.

A portable refrigeration unit has been developed to produce the chill and the technique is especially suited for use on soldier casualties, the congress was told.

Dr. Lyman Weeks Crossman, senior attending surgeon at New York City Hospital, and Dr. Frederick M. Allen, of the New York Polyclinic Medical Hospital, developed the technique and Dr. Crossman described it in a prepared paper.

In describing the successive steps taken in developing the new procedure, Dr. Crossman explained that the first means used for chilling limbs preparatory to operating had been immersing the limb in ice water for several hours before the operation, or burying the leg in cracked ice.

More recently in the preparation of patients for the operation, a special refrigerating apparatus had been used to produce the chilling effect more conveniently.

"The new refrigeration unit," said Dr. Crossman, "measures 14 x 14 x 28 inches and weighs 100 pounds. It may be placed anywhere in an ambulance, truck, trailer, or mobile operating wagon. The electricity generated by the automobile is sufficient to run the refrigerator.

"The unit may be placed anywhere out of the way—on the wall, under the seat. Two patients may be treated simultaneously. Within one hour the man can be ready for the operation.

"The use of refrigeration anesthesia for war injuries," commented Dr. Crossman, "is very pertinent, especially for amputations, compound fractures, and burns of the extremities. As an example, if a soldier has his foot and lower one-third of the leg shattered and the first surgeon to examine him decides the part must be amputated—if a tight tourniquet is properly applied—there will be no further bleeding, no shock impulses can pass the tourniquet, and any infection that develops will be confined below it.

"Surgery using refrigeration anesthesia," Dr. Crossman continued, "causes no change in the pulse rate, respiration, or blood pressure, so that the soldier may be transported immediately after the operation without pain or ill effect so long as the stump is kept refrigerated."

In discussing operation procedure, Dr. Crossman reported, "it is important to emphasize that (with refrigeration anesthesia) the tissues are not frozen, and the use of the word freezing conveys a false impression.

"The (body) tissues," Dr. Cross-

Concluded on Page 16, Column 4)

Refrigeration Industry Aids In War Program In a Wide Variety of Ways

Special Heat Exchanger Prepares Oil For Special Aircraft Engine Tests

Flexible Apparatus For Exact Conditions Made by Trane

LACROSSE, Wis. — A special oil heat exchanger for cooling and heating aircraft engine test oil has been developed by the Trane Co. here.

To test aircraft engines, the temperature of the lubricating oil used in the motors must be carefully controlled at all times. During warm-up periods the oil must be heated to a predetermined temperature in order to speed test work. After the motor reaches normal operating conditions, the temperature of the oil must be kept below certain limits.

NEEDS OF MANUFACTURE

A producer of aircraft engines wanted one unit to do both jobs. In addition, the unit had to meet the demands of mass production in the aircraft engine factory. It had to be compact, light in weight, and easily connected. It also had to be able to withstand 30 pounds oil pressure, and furthermore, had to be easy to clean. Thus, the connections to oil, steam, and water lines had to be easily made and broken.

Steam at 25 pounds pressure was the most convenient heating medium. Water was used for cooling.

Trane engineers used an extended surface coil through which either steam or water could be circulated. Instead of ordinary fin spacing, the fins were so arranged that the coil could be easily cleaned and oil clogging eliminated.

OPERATION OF SYSTEM

Then the heat transfer surface was attached to a base that provided for steam, water, and oil connections. Over this assembly was placed a cover that formed a reservoir for the oil. For maximum strength external ribbed reinforcements were used, thus permitting uninterrupted oil flow within the unit. The cover was sealed in place with a neoprene gasket and easily removable cap screws. A unit was provided that could be cleaned without disconnecting steam, water, or oil piping.

The oil to be conditioned is pumped into the bottom of the unit where it is permitted to circulate around the coil. Either the steam or hot water is circulated through the coil, depending on the temperature conditions desired in the oil. After the oil has been treated in this manner, a stand pipe in the unit permits the oil to be drained off and returned to the test cell ready for use.

Bronze Bushings Are Chilled To --30 F°. To Speed Production

SYRACUSE, N. Y. — Chilling bronze bushings to —30° F. is one of the many ways in which refrigeration equipment is helping to speed production in war plants, Carrier Corp. engineers report.

Extending the tolerance without sacrificing the precision, the chilling process permits the machining to be done in a shorter time.

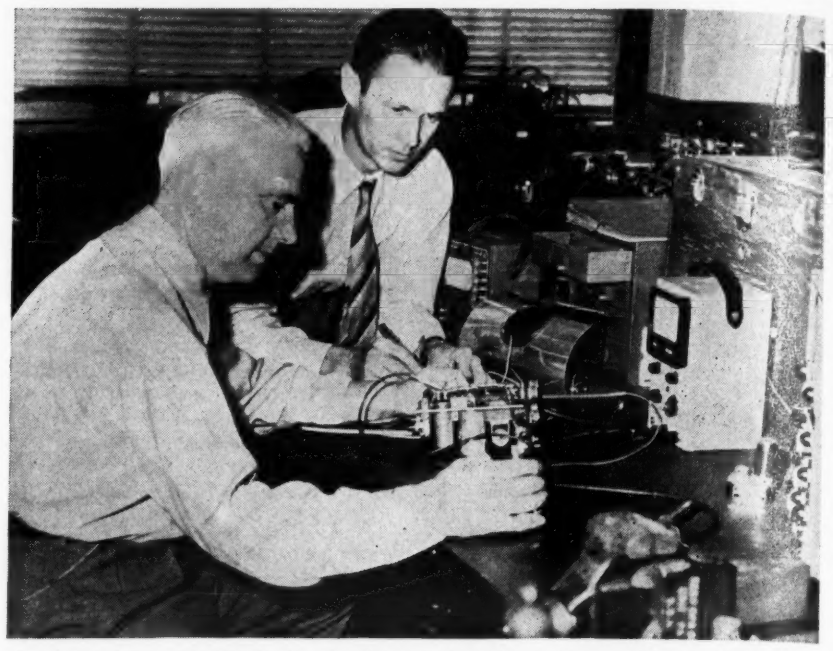
Seasoning time for the casting is also reduced with the low temperature treatment.

Castings no longer need lie exposed to outdoor sun and cold for several months, but can be machined soon after they come from the mold when the chilling process of seasoning is used.

The tank, built with insulated walls and having a "refrigerator door" type cover, includes a cooling coil around the interior. The refrigerating machine, located adjacent to the tank, supplies the cooling effect to bring the liquid in the tank to —30° F.

The liquid is a 50-50 mixture of an anti-freeze and water, the concentration of anti-freeze being selected so as not to freeze at the operating temperature of the chilling tank.

Ice Indicator, Developed by M-H, Should Prevent Many Plane Accidents



An ingenious electronic ice indicator signalling the presence of ice and automatically operating plane de-icers is a new aid to flying developed by W. J. McGoldrick (seated), vice president in charge of aeronautical research for Minneapolis-Honeywell Regulator Co., and Dr. Waldo Kliever (right, 35-year-old physicist of the company, shown here checking the wiring of the device.

* * *

MINNEAPOLIS—Details of a new electronic device which signals and measures ice forming on airplanes in flight and automatically operates the plane's de-icers have just been made public here by H. W. Sweatt, president of the Minneapolis-Honeywell Regulator Co., which developed the long sought flying aid.

Called an "Ice Indicator," the instrument will improve the efficiency of Allied bombing planes and marks a further advance in flying safety, he said.

Developed at the instigation of commercial airlines and the U. S. Army Air Corps, the instrument is the result of protracted research in company laboratories and flight tests over the worst icing territory in the United States, Mr. Sweatt stated, adding that a National Advisory Committee for Aeronautics plane had been equipped with one of the new instruments since last fall.

"It is possible that before long most large Allied bombers and cargo carrying planes will be equipped with this newest development to come from Minneapolis - Honeywell aero laboratories," he said.

According to the M-H president, the need for accurate measurement of the accumulation of ice on plane wing surfaces has been acute since winter flying became mechanically possible. While most large commercial and bombing planes are equipped with rubber de-icers the problem in the past has been to know when to start them operating. De-icing equipment is now standard on commercial airlines and most long range military planes, but to operate at maximum efficiency, the de-icer must be turned on when the ice can best be cracked off.

"The 'Ice Indicator' provides the pilot with information on the thickness and rate of accumulation of ice on exposed plane surfaces," he stated. "For the first time in flying history de-icing equipment can be turned on at the exact moment it becomes most efficient."

The indicator itself is composed of three separate units and utilizes principles of electricity for its operation. A "pick-up plate" or sensing element is mounted on wing or plane surface where ice acretion is to be measured, he said. This plate, which is very small, is set flush with the plane so as not to disturb the air foil. It contains parts which actuate the mechanism by noting the accumulation of ice.

The disc is connected to an amplifier inside the wing, which in turn is connected to a power supply unit. The latter does the actual work of turning on the de-icers and registering accumulation on an instrument board meter.

The entire indicator, including the amplifier and power supply unit, weighs less than five pounds.

Late last year, Mr. Sweatt said Karl Larson, chief engineer of Northwest Airlines asked William J. McGoldrick, vice president in charge of the Aero Division at Minneapolis-Honeywell if it would be possible to develop an accurate indicator. At Larson's request McGoldrick assigned Dr. Waldo Kliever, 35-year-old company physicist, to the task. It took six months of intensive research and trial for Kliever to create the first indicator, Sweatt added, but the instrument he completed last fall is essentially the same as the more refined model which has just completed its exhaustive tests.

Maintaining the coolant at precicely the proper temperature keeps machines at top efficiency 24 hours a day — 7 days a week

ACCURATELY CONTROLLED Coolant Cooling KEEPS MACHINES AT TOP EFFICIENCY

☆ ☆ ☆ ☆ A NEW WAR PRODUCTION MACHINE TOOL FOR

● PORTABLE RIVET COOLERS ● CONDITIONING TOOL AND DIE ROOMS ● COOLANT COOLING ● OPTICAL EQUIPMENT MANUFACTURING ● HEAT TREATMENT ● COOLING ELECTRODES FOR SPOT WELDERS ● MANY OTHER OPERATIONS

ACCURATE control of coolant cooling is another important way in which refrigeration can increase war production with existing machinery. To perform its function with the most effectiveness, refrigeration, of course, must be accurately controlled. You can do this better with M-H Controls . . . Minneapolis-Honeywell Regulator Company, 2807 Fourth Avenue South, Minneapolis, Minnesota . . .

MINNEAPOLIS-HONEYWELL REFRIGERATION Control SYSTEMS
THE POLARTRON SYSTEM OF FROST-FREE REFRIGERATION

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Industry at war is finding more and more uses for refrigeration and conditioned air. That means there's plenty of sales and service opportunities for men who'll go out and scratch for them.

Gilmer Belts can help you . . . for their strength and stamina make Gilmer Belts a "natural," wherever smooth, dependable pulling power is desired. Order through your jobber . . . he can fill your requirements promptly.

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The Machine For Your Next Job...
If it's a refrigeration job ...no matter how big or how small...we can supply Lipman equipment to hit the specifications. Let us work with you.
GENERAL REFRIGERATION DIVISION
Yates-American Machine Co.
Dept. AC-3, Beloit, Wis.

'Ideal War Plant' Egg-Shaped, Air Cooled, Bacteria-Proof

Westinghouse Expert Describes Main Features Of a Fully-Protected, Peak Production Plant

EAST PITTSBURGH, Pa.—George H. A. Parkman, Westinghouse construction expert, recently drew up the recipe for the "ideal war factory"—a blackout, bomb-resistant, windowless building from which vital military machines and armaments would flow 24 hours a day, uninterrupted by air raids or sabotage.

Drawing on ingenious American technical achievements of the past decade, Mr. Parkman advocated the use of artificial daylight and precisely regulated temperature and humidity inside the arch-roofed superfactory to raise to a maximum the efficiency of men and machines.

A modern "failure-proof" system of factory power supply designed to localize damage from bombing, sabotage and other causes, would assure an unbroken flow of electricity to lathes, drills, welding sets and other equipment used to shape machines of war.

Two recent inventions would supply the cleanest air modern science can produce, protecting the health of workmen and guarding delicate machine parts against scratching. One of these, an electric air cleaner, would bar the entrance of air-borne dirt, dust and smoke. The other, the Sterilamp, would stand guard in air ducts, killing bacteria with its invisible ultraviolet rays.

FOR PEACETIME, TOO

Although this blackout superfactory would be adequate for the manufacture of almost any type of war equipment, its advantages are so great they would carry over into peacetime factory construction, inaugurating a new era in improved industrial working conditions, the Westinghouse engineer believes.

Many of these engineering advances have already been incorporated in factories constructed in the past year, but no factory has yet been built to take full advantage of all these recent developments. Increased comfort of workmen and protection of health in such a factory would improve morale, and speed production by reducing lost time due to illness.

The building would be made of reinforced concrete, with an arched "eggshell" type roof, to save time and steel and to provide a structure that would suffer least from bombing, sabotage and fire.

A 'THIN' SKULL

Although parts of the arched roof might be no thicker than three or four inches, the structure would not lack strength, because it would have the same general shape as an eggshell.

This concrete construction costs about the same as steel frame construction, but requires only about 40% as much steel, a vital war material. Explosions from bombing or sabotage would cause only local damage, easily repaired.

One of these concrete "egg-shell" factories is now nearing completion at a Westinghouse plant.

To maintain an uninterrupted flow of power to the machines of the blackout war factory, use of a new "failure-proof" factory power network was recommended.

POWER, LIGHT, AND AIR

Damage to one section of the factory will not interrupt the flow of electricity to other parts. The scattering of transformers and protective switches throughout the factory greatly lessens the danger of complete power blackout from a short circuit, bombing or sabotage. Also, this system is easier to repair and enlarge for factory expansions, because a small section of the system can be switched off while the remainder continues to supply power to machines.

In a windowless and hence permanently blacked-out plant, lighting will be important because no daylight will enter and all work, 24 hours a day, must be done under artificial light.

Fluorescent lamps are favorites for such factory lighting because they produce more than twice as much light as incandescent lamps from the same amount of electricity. Also, they give off less heat, and can produce light of a color that nearly duplicates daylight. Proper use of fluorescent lighting can increase production, because people can work better and feel more like working if given sufficient light.

Air conditioning is essential in a windowless plant to provide fresh air for workers to breathe, remove factory fumes and regulate temperature and humidity.

Proper temperature control, through air conditioning, permits employes to work faster in comfort. To eliminate stale air and prevent a feeling of laziness and loss of appetite, it is necessary to supply new outdoor air at the rate of 15 to 30 cubic feet a minute for each occupant of the factory.

Experiments in blackout plants built this year have shown Westinghouse engineers that the best way to air condition such a factory is by a number of small cooling units located in various sections of the building. Damage to one unit would not affect the operation of all others.

ELECTRICAL BLITZ FOR DIRT

To add further to the health and comfort of workers in the ideal blackout factory, Mr. Parkman advocated installation of two devices in air ducts. One of these, the electric air cleaner, uses 12,000-volt electricity to catch and hold 90% of all air-borne dust, dirt and smoke particles.

Lamp research engineers have found that 95% of air-borne disease germs in air entering a factory can be killed by the ultraviolet light. It is believed that such a cleaning of factory air reduces a worker's danger of contracting communicable diseases.

W. A. Hammond Co. To Reestablish Operations In Xenia, Ohio Plant

YELLOW SPRINGS, Ohio—W. A. Hammond Drierite Co., a commercial chemical enterprise now engaged 90% in production for the government war effort, will be reestablished in Xenia, Ohio, within a short time.

Properties of the E. H. Hunt broom factory including the manufacturing buildings and residence were purchased recently by W. A. Hammond, founder and president, to accommodate the expanded production of the company.

In order not to interrupt production any more than necessary, the removal from the location here will be made a gradual process. It is planned to move the plant in a 3-month period.

The company is engaged in the production of a drying agent or desiccant for industrial, laboratory, and now for military purposes.

'Wagon Dock' Latest Locker Plant Need

HORTON, Kans. — Tulk's Grocery and Market here has installed a 400-unit locker plant to serve rural customers. Feature of the plant designed to meet wartime conditions is a "wagon dock"—for the benefit of farmers again using wagons for transportation to town, instead of their automobiles.

Westinghouse Distributors In Name Change

BUFFALO—A new corporate name has been announced by Westinghouse Merchandise Distributors, Inc., major appliance distributor for Buffalo and surrounding towns for Westinghouse products. The new name announced by E. B. Ingraham, vice president, will be Western Merchandise Distributors, Inc., and is merely a change in title not involving the incorporation or stockholders, according to Mr. Ingraham.

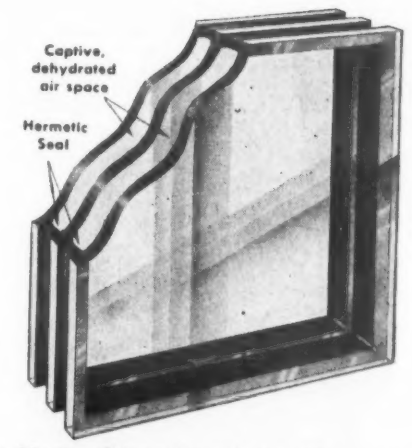
THERE'S NO SHORT CUT TO *Visual Selling!*

Shoppers see what they want in Thermopane-topped cases.

Replace "Blind Top" Cases with *Thermopane*

Shoppers won't buy what they can't see . . . but your customers can and will see what they want—*and buy it*—if your Frozen Food cases are equipped with Thermopane—the clear vision, nonfogging glass top for display cases. Thermopane eliminates condensation between panes—keeping them clear and fog-free. All inside glass surfaces leave the factory spotlessly clean—and stay clean because of the patented edge-sealing of the unit which prevents infiltration of even the finest dust particles.

Your customers will see their way clear to increased purchases of frozen foods when your cases are equipped with clear-vision Thermopane tops. Install this aid to selling now—replacing "Blind Top" cases with Thermopane. Libbey·Owens·Ford Glass Company, 1385-A Nicholas Building, Toledo, Ohio.



An Air-Conditioned Sandwich. Thermopane is a glass unit consisting of two, three or more panes of glass, separated by a ¼-inch or ½-inch of captive, dehydrated air, and sealed around the edges by an air-tight metal seal.

L O F GLASS

LIBBEY·OWENS·FORD

Thermopane

"Better Seeing Means Better Selling"

GET COMPLETE INFORMATION ON REPLACEMENT WITH THERMOPANE

Stock sizes are available or can be made to fit most frozen food and refrigerated display cases. Write us for replacement information on your particular case.

L-38 Change Releases Cases, Certain Other Types of Cabinets

(Concluded from Page 1, Column 5)

may now sell, without restriction, manufacture of evaporative coolers with a capacity of 2,000 cu. ft. of air per minute, or less, and ice cream cabinets which are not for use aboard ship. Evaporative coolers rated over 2,000 c.f.m., and ice cream cabinets for use aboard ship, may now be manufactured only for deliveries under Preferred Orders (as defined in L-38).

The manufacture of immersion (drop-in type) milk coolers for use on the farm is not now restricted by L-38, but remains subject to the restrictions contained in Limitation Order No. L-26, as amended.

Sales of the following items by producers, to dealers or any other persons, are now forbidden, except for deliveries to, or for the account of, the Army or Navy of the United States (including Army Exchanges, Naval Ship Stores, Officers' Messes, and Officers', Non-Commissioned Officers' and Enlisted Men's Clubs), the United States Maritime Commission, the War Shipping Administration, Panama Canal, or Coast Guard:

1. Self-contained or remote draft beer dispensers, including storage cabinets and water chilling devices.
2. Carbonated beverage dispensers.
3. Mechanical bottled beverage coolers, whether of reach-in, counter, or self-contained type.
4. Low temperature mechanical refrigerators having a net capacity of 8 cu. ft. or less designed for the storage of frozen food or for the quick freezing of food.
5. Self-contained air conditioners (room coolers), and window type air conditioners having a rated capacity of less than 2 hp. or a refrigerating capacity of less than two tons. (ASRE Specifications).
6. Soda fountains without facilities for bulk ice cream storage (fountainette type).
7. All ice cream cabinets whether for use aboard ship or not.
8. Evaporative coolers rated at 2,000 c.f.m. or less.
9. All double duty refrigerated display cases.

(Under the order prior to this amendment, producers could sell some of these items in certain cases where sales are now restricted.)

Dealers and other authorized channels of distribution are now permitted to sell, without restriction, their stocks of the following items:

1. Carbonated beverage dispensers.
2. Mechanical bottled beverage coolers, whether of reach-in, counter or self-contained type.
3. Low temperature mechanical refrigerators having a net capacity of 8 cu. ft. or less designed for the storage of frozen foods or for the quick freezing of food.
4. Self-contained air conditioners (room coolers), and window type air conditioners having a rated capacity of less than 2 hp. or a refrigerating capacity of less than two tons. (ASRE Specifications).
5. Soda fountains without facilities for bulk ice cream storage (fountainette type).
6. Florist boxes.
7. Ice cream cabinets, whether for use aboard ship or not.
8. Non-mechanical water coolers (whether of the ice bubbler or bottled type) having an ice capacity of less than 25 pounds.
9. Evaporative coolers rated at 2,000 c.f.m. or less.
10. All refrigerated display cases.
11. Low temperature mechanical refrigerators having a net capacity of more than 8 cu. ft. but not over 24 cu. ft., to be used for the freezing and storage of food on a farm (Farm Freezers).

(Certain of these items would previously be sold by dealers or other authorized channels of distribution, if in the dealers' possession or control on June 18, 1942.)

Producers, dealers, and other authorized channels of distribution may now sell, without restriction, their stocks of the following items, regardless of when acquired:

1. Non-mechanical bottled beverage coolers of the ice chest type.
2. Refrigerated vegetable display cases.
3. Florist boxes, and florist display cases.
4. Single duty refrigerated display cases.
5. Non-mechanical water coolers (whether of the iced bubbler or bottled type) having an ice capacity of less than twenty-five (25) pounds.
6. Vending machines as defined in Limitation Order No. L-27.
7. Low temperature mechanical refrigerators having a net capacity of more than 8 cu. ft. but not over 24 cu. ft. to be used for the freezing and storage of food on a farm (Farm Freezers).

Midwest Meeting of 'Victory Program' Is Cincinnati Bound

(Concluded from Page 1, Column 1)

plete representation of the management of every manufacturing company in the industry together with as great a representation as time and travel will permit from all segments of the industry. The time of the meeting will be planned to interfere as little as possible with work.

This meeting, asserts Mr. Knighton, will be of particular importance to the refrigeration and air conditioning industry; first, because it will represent a physical manifestation of the willingness and desire of this industry to function as a unit in its contribution to the winning of the war; secondly, it will establish a unity. By this act, he points out, it will reflect a size and stature in keeping with the importance of the industry to the war effort.

Connections for Electric & Gas Ranges Permitted In Specified Cases

(Concluded from Page 1, Column 1)

a gas or electric connection for the operation of a range. In the case of an electric range, not more than 15 pounds of copper may be used for the connection. In the case of a gas range, not more than 75 feet of 1¼ inch pipe or its equivalent weight of other sizes may be used.

If the house is already equipped with either a gas service line or 3-wire electric service line adequate to energize a range, then no additional service line is permitted. That is, if a person owning an electric range moves into a house with a gas connection, he cannot obtain an electrical connection. Similarly, if a person owns a gas stove and moves into a house which has no gas service line but is equipped with a 3-wire service line, he cannot obtain a gas connection. In such cases consumers are expected to trade the ranges which they have on hand for ranges of a type which can be used with the utility connections already in place.

Best 'Speaker Line-up' In History Set For Boston Conference

BOSTON—"It will not be a 'usual' Conference," stated David Bloomfield, director of the 14th annual Boston Conference on Distribution, presenting a national forum for problems of distribution at the Hotel Statler here, Oct. 5-6, 1942.

The program with P. A. O'Connell as chairman, will include distinguished speakers on subjects affecting every business interest. Another feature of the Conference will be a session devoted to "What's Ahead for Distribution?—as Business Editors See It."

Speakers for the former will be: Hon. Joseph B. Eastman, Director of the Office of Defense Transportation; Hon. Harold Butler, British Minister to the United States; Sir Louis Beale of the British Supply Council in North America; Eric Hodgins, editorial vice president of "Time," Inc.; Merle Fainsod, director, Retail Trade and Services Division, Office of Price Administration.

David C. Prince, vice president of the General Electric Co.; Robert R. Nathan, chairman of the Planning Committee, War Production Board; Donald K. David, Dean of the Harvard Graduate School of Business Administration.

Hon. Wayne C. Taylor, Under Secretary of Commerce; David E. Grant, Foreign Council of the Pan American Airways System; Dr. Melvin I. Copeland, economist of the Harvard Graduate School of Business Administration; Malcolm P. McNair of the Harvard Business School.

Dr. W. S. Landis, vice president of the American Cyanamid Co.; Edward L. Bernays, public relations council; Dr. Julius Hirsh, consultant to OPA; Leo M. Cherne, executive secretary, the Research Institute of America; Colonel A. Robert Ginsburgh, U.S.A., director, Public Relations Division, Headquarters, Services of Supply, War department; and Henry Bristol, president of Bristol-Meyers Co.

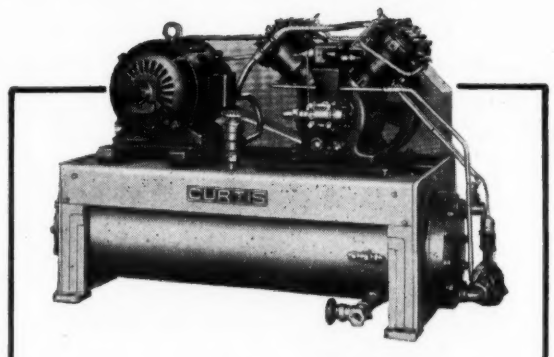
Those taking part in the discussion for business editors will include:

C. F. Hughes, Business News Editor of the "New York Times;" J. B. Wallach, Business News Editor, "New York Sun;" Harvey Runner, Business News Editor, "New York Herald Tribune."

How to Prolong the Life of CURTIS REFRIGERATING EQUIPMENT

Never before has maintenance of existing equipment been as important as it is today because of the great need for the conservation of material and power.

Here are some tips on how you can further extend the life of Curtis equipment:



Curtis Shell and Tube Type Condensing Unit

Motor Lubrication: Oil motor bearings with a good grade of light oil (viscosity 150-200) SAE-20.

Compressor Lubrication: Maintain proper oil level. If necessary to add oil, do not add all at one time. It should be added in small quantities at intervals. Use only CURTIS oil.

Belts: Keep oil off belts and make certain that pulleys are in alignment and that belt is adjusted to proper tension.

Refrigerant Requirements: Use only refrigerant specified on unit nameplate. Do not overcharge.

Electrical Specifications: Be certain that motor is connected to correct current. Check nameplate on motor and controls. For overload protection use line fuses of proper rating—three times the full load amperage rating of motor as shown on motor nameplate.

Location: Air-cooled units should have free circulation of cool air. Water-cooled units should be installed where they will not be subject to freezing temperatures.

User Instructions: Instruct the user in the care and operation of this unit—how to oil motor and replace fuses. Have your name, address, day and night telephone numbers posted near the unit.

Announcing
New Policy on Repair Parts

In line with conservation of vital material and at the request of the War Production Board, the following policy is announced:

1 Before an order can be filled for a replacement part, the old part must be returned to the factory, transportation charges prepaid.

2 If equipment is in the warranty period and requires replacement, return the old part with complete information as to model and serial number, and reason for replacement. A new or reworked part will be shipped, no charge, if part returned is defective.

3 If equipment is out of the guarantee period, make every effort to have it repaired locally. If this is not possible, return part to the factory with order. Replacement will be shipped as soon as possible.

4 Furnish priority rating and allocation classification symbol with ALL orders. Include instructions for shipping.

The cooperation of dealers will help assure delivery of repair parts.

CURTIS REFRIGERATION AIR CONDITIONING AND COMMERCIAL

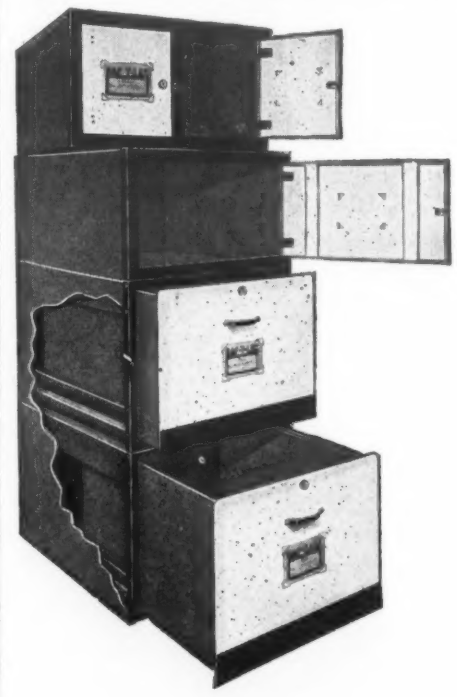
CURTIS REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company
1950 Kienlen Avenue, St. Louis, Missouri

★ ★ CONSERVE METAL, BUY WAR BONDS AND STAMPS ★ ★

Hats Off to MASTER Locker-Equipped Plants

To the food processing and storage plants that contain over 300,000 Master Lockers and Drawers, goes a "salute" for their contribution to the Nation's Victory Program.

These plants, by processing and storing meats, fruits and vegetables at the point of production for local individual consumption, are making available for more urgent use immense numbers of freight cars and trucks—a real contribution to our war program.



MASTER Leads

In the development of locker construction, Master has set a standard by which all others are judged. If you want full particulars on Master Lockers, write for our folder "The Choice of the Industry."

Endorsed by and sold only through distributors of refrigeration and insulation.

MASTER REFRIGERATED LOCKER SYSTEMS, Inc.
121 Main St. Sioux City, Iowa

Over 300,000 Masterbuilt Lockers in Use

Truck Users Will Be Required To Get 'Certificate of War Necessity'

WASHINGTON, D. C.—Possession of an Office of Defense Transportation (ODT) Certificate of War Necessity will be made an additional requirement to be met by operators of commercial vehicles generally in qualifying for tires under the rationing program, although the Certificate alone will not make a vehicle eligible, the Office of Price Administration (OPA) has announced.

This provision will be made by OPA to help in implementing an order announced Sept. 9 under which the ODT will exercise control over the use of virtually all commercial vehicles. Since the ODT order covers "any rubber-tired vehicle, excluding a motorcycle, propelled or drawn by mechanical power and built primarily for the purpose of transporting property" it will cover trucks used by refrigeration dealers and service companies.

OPA said that between now and Nov. 15, when the ODT order becomes effective, the tire rationing regulations will be amended so that operators of vehicles coming within the scope of the order must present a Wartime Necessity Certificate, together with records showing compliance with ODT mileage limitations, in applying to a War Price and Rationing Board for tires.

WON'T AFFECT RATIONING

However, it was pointed out that the ODT order does not otherwise affect the eligibility lists for tire rationing, and in all likelihood many of the vehicles that ODT requires to get Certificates of War Necessity will not be able to qualify for tires.

The ODT order establishes a program under which every vehicle affected by the order will be required to carry a Certificate of War Necessity. The order gives ODT authority to require that trucks, etc. "be operated in such manner, for such purposes, and between such points as ODT shall from time to time direct," regardless of any existing contract or lease on the vehicle.

By means of its order the ODT will effect a country-wide rationing of gasoline as far as commercial vehicles are concerned, since in non-rationed areas, truck drivers must present a certificate of war necessity in order to buy gasoline. The quantity to which a truck will be entitled will be determined by the mileage allowed by the ODT in granting the certificate.

NO CERTIFICATE, NO GO

Lacking a certificate, a truck, whether in the rationed area or not, will be immobilized since the certificate will be a fundamental qualification for getting tires, tubes, replacement parts, or gasoline. Where motor fuel is rationed, the certificate will have to be shown to a rationing board in order to renew an "S" ration book.

The Certificates of War Necessity will govern the maximum mileage which may be operated or the minimum loads which may be carried, or both, by all vehicles to which they are issued.

Provision is made that the tires of every vehicle affected by the order must be checked at an inspection agency designated by the OPA, which is cooperating with the transportation agency, every 5,000 miles or at the end of each 60-day period, whichever occurs first.

'ESSENTIAL TASKS' ONLY

In granting certificates ODT intends to see that operations of vehicles are confined to tasks necessary to the war, or to the essential domestic economy, that the maximum utilization of equipment is obtained, and that operators conserve and utilize providently rubber or rubber substitutes and other critical materials used in the production, maintenance, and operation of the types of vehicles covered by the order, it was explained.

Applications for certificates will have to be made on forms which are now being prepared and which will be submitted to operators. They will have to be submitted to ODT field officials nearest the home office or principal place of business of the applicant.

The certificates will not be transferable. According to ODT, each will specify these facts:

"The name and address of the person to whom it is issued.

"The vehicle or vehicles covered.

"The purposes for which and the conditions under which the vehicle or vehicles may be operated.

"Such other terms or conditions as the ODT may from time to time direct."

A certificate issued for a single vehicle must be carried on the vehicle at all times. When a certificate is issued for a fleet of vehicles (three or more cars operated by one person) a fleet unit certificate must be carried on each vehicle.

Each operator will be required to keep a weekly record of all operations of his vehicle on a form prescribed on the back of each certificate and must keep all other records and make all reports which may be required of him from time to time by ODT.

Two Refrigeration Men Count Their Scrap Drive Results In Tons

3800 Pounds of Copper Among Materials Collected

PORTSMOUTH, Ohio—Proof that the refrigeration service engineer is in a position to be a very important factor in the nation's vital scrap and salvage drive has been demonstrated by the activities of two Portsmouth men, whose activities were reported in the local newspaper as follows:

"E. L. Minch, local refrigeration engineer (Mechanical Refrigeration Service Co.) and Ivan Wilbur, refrigeration distributor in this vicinity (C. V. Hill & Co.) recently conducted a salvage drive on used and wornout refrigeration equipment in their warehouses at Portsmouth and Hamden, with the result that Uncle Sam obtained 200 pounds of block tin, 3,800 pounds of copper, 100 pounds of lead, 1,290 pounds of brass, 290 pounds of aluminum, and 4½ tons of scrap steel. They invested the entire proceeds in U. S. war bonds.

"Mr. Minch, whose work carries him into basements of business houses and homes in Portsmouth, reports that there is enough discarded vital scrap metal available to build several tanks. He urges sale of such scrap, if it be an abandoned furnace weighing several hundred pounds, or the small brass base on the ordinary light bulb."

Says Mr. Minch, in further explanation of how the service engineer can help out in the scrap drive:

"I further help the cause along by talking to customers whose basements I find filled with scrap. I ask them to let me call the local scrap collector to get the metal, or, if they prefer to sell the metal, to call the local scrap dealer. I ran onto one job recently that netted 4,200 pounds of good scrap metal."

WPB Now Checking on Tin Order Compliance

WASHINGTON, D. C.—The Compliance Branch of the War Production Board announced Sept. 14 that it has initiated a survey of the operations of the principal manufacturing users of tin, to determine their degree of compliance with WPB orders issued to conserve this scarce material for essential war uses.

The 280-odd firms whose operations are being checked use approximately 90% of all tin consumed in this country.

Federal Trade Commission examiners will conduct the field work of the survey.

MacNamara In New Post

MILWAUKEE—E. E. MacNamara, appliance buyer for the Boston Store here, has been appointed radio buyer also, following the death of Arthur Evans. Mr. MacNamara is now buying radios, major appliances, bedding, furniture, etc.

TRUE OR FALSE QUIZ ON FOOD LOCKER PLANTS

TRUE FALSE

1. *Frozen food locker plants provide patrons with much more than just freezer-storage facilities?* ☐ ☐
2. *Use of frozen food locker plants is confined to wealthy estate owners.* ☐ ☐
3. *There are over 4000 locker plants in the United States?* ☐ ☐
4. *Locker plants are found only in midwestern and far western states?* ☐ ☐
5. *Use of locker plants has decreased since we entered the war?* ☐ ☐
6. *Locker plants help conserve rubber in wartime?* ☐ ☐
7. *There is no such thing as "faster" quick freezing?* ☐ ☐
8. *It is possible to get a refrigerant that is non-toxic, non-flammable, non-irritating, and harmless to foods?* ☐ ☐
9. *Supplies of "Freon" are adequate for locker plant use?* ☐ ☐
10. *"Freon" meets wartime conditions imposed by metal scarcity?* ☐ ☐

ANSWERS

1. **TRUE** – Modern plants are surprisingly complete food processing establishments. Some are actually miniature packing houses and practically all offer many services in addition to freezing and storage.

2. **FALSE** – Locker plants are used by all classes of the population and a recent survey showed that 71% of the patrons of U. S. locker plants are *farmers.*

3. **TRUE** – 4156 plants were in operation at the close of 1941. This represented an increase of 884 over the number reported in 1940.

4. **FALSE** – Last year all states, except New Hampshire and Rhode Island, were found to have locker plants. However, Iowa, Washington and Minnesota led with over 400 plants each.

5. **FALSE** – A check-up in the spring of this year showed all but recently built plants were better than 95% occupied.

6. **TRUE** – Most of the 738,000,000 lbs. of perishable foodstuffs handled by locker plants in '41 was processed and consumed right in the communities that produced it – eliminating the necessity for long truck hauls to and from processing centers.

7. **FALSE** – Use of "Freon" refrigerants brought in the use of plates instead of coils which made quick freezing more efficient and faster. Modern "Freon" plants can freeze foodstuffs in 4–6 hours, compared with 24 hours required by old style plants.

8. **TRUE** – "Freon" meets all of these requirements for a safe refrigerant. In case of refrigerant leakage, its vapors will not injure, or even affect the taste, of dairy products, meats, eggs, fruit, or vegetables.

9. **TRUE** – Plant capacity and raw material supplies for manufacturing "Freon" have been adequate since early this year and remain adequate to furnish "Freon" for all permissible uses.

10. **TRUE** – "Freon" is non-corrosive to all metals used in refrigerating equipment. This enables manufacturers of "Freon" equipment to substitute *available* metals for those made unavailable by war shortages.

Conserve vitally needed replacement parts, power and refrigerants – have your refrigerating system inspected regularly by a competent service man.

KINETIC
FREON
REG U.S PAT OFF
safe refrigerants
"Freon" is Kinetic's registered trade mark for its fluorine refrigerants

New Forms Provide Way To Accurate Analysis of Service Business

Simple-To-Use Record Sheets Give Quick Picture of the Profit Status

PITTSBURGH—As a refrigeration and appliance service operator, are you satisfied that your business is returning the proper net profit? Are you sure that some expenses are not running unnecessarily high? Are there some lines of service that might be developed into better profit producers for you? Have certain overheads crept up beyond a reasonable percentage? Are your servicemen handling a proper volume of work?

The answers to these and other questions of similar character are essential for the service dealer if he is going to protect his interests in his business. And as time goes on, increased business, government regulations, and other factors will make it even more necessary for him to have all the facts relating to his business.

To make it easier for the average service operator to analyze his business and collect this essential information, West Penn Power Co. here has prepared several forms that provide a simple method of service operations analysis. This was done as a result of discussions between West Penn representatives and the managements of various service outlets.

These forms are not to be confused with an accounting system and cannot replace bookkeeping. One of the forms, however, can be used as a journal. Primary purpose of the system, however, is to provide an easy method of analyzing the records of the business.

Naturally, the service firm should have a Combination Work Order and Customer Invoice. (These are illustrated on this page, a card type on top, and a paper form type below). These are used to make records and charges on each job.

Following is a brief description of the forms, and the things that they will help to accomplish for the service operator:

DAILY RECORD OF APPLIANCE SERVICE

This form provides an easy method of keeping a running account of each item of service handled. The date, appliance, nature of work, and the serviceman (where more than one is employed) can be noted, together with the labor, travel, and materials costs and amount charged.

It requires but a few minutes each day for someone to enter this information, and such a daily record provides the basis for obtaining a comprehensive analysis of the entire operation.

APPLIANCE SERVICE ANALYSES

The appliance service analyses form offers the means of collecting data from the daily record for easy analysis during any period desired. It is advisable, however, to make such analyses for periods not longer than one month, as the shorter the period, the easier the figures can be collected. If an analysis is desired over a longer period of time, it is then a simple matter to obtain it from these short-term records.

Space is provided for three types of analyses—"Work per Man," "Work by Lines" and "Shop and Outside Work."

WORK PER MAN

Where more than one man is employed it is necessary to have evidence of the productivity of each man. When the facts are assembled, it may be discovered that one man is not producing a profitable volume of business and that steps should be taken to remedy this situation.

It may prove advisable to adjust the basis of compensation, or to check carefully into the various overheads involved for each man.

Such an analysis is the first step in determining that there are no correctable losses incurred in the work done by individuals in the organization.

WORK BY LINES

The analysis of work by lines will be of value to those dealers handling service on more than one type of appliance. The information classified by lines will show the relative importance of each kind of appliance service as a revenue producer.

It may show that it is advisable to try to develop business in certain lines, or to investigate the overheads incurred in servicing some items.

For example, the analysis might show a small volume of cleaner service, with a relatively high gross profit, indicating that it might be well to go after more cleaner business. On the other hand, a large volume of washer business might be handled with a comparatively low revenue. In this case, it would be necessary to check the time involved on various washer repair jobs in relation to the charges made.

SHOP AND OUTSIDE WORK

The third analysis deals with a breakdown of shop and outside work. With automobile expense increasing, it is necessary to examine the results of outside work very closely and to compare them with those of straight shop work.

All the figures necessary for making these analyses can be obtained from the daily record of appliance service.

APPLIANCE SERVICE BUDGET AND OPERATIONS COMPARISON

Any accounting system should provide the figures necessary to compile a monthly operating statement, which shows the complete picture of the income from service, the various expenses involved, and the net revenue. And when these facts are

(Concluded on Page 7, Column 1)

Samples of Combination Work Order-Invoice Form

JOB TICKET
INDEPENDENT
Radio & Television Service
Washington, Pennsylvania
No. Delivered Ck
Rep'd by

NAME PHONE JOB NO
ADDRESS MAKE-MODEL
TO BE DELIVERED PHONE 84 DELIVERY WILL CALL
DATE IN WANTED
ITEMIZATION OF WORK DONE
PARTS USED | PRICE | TUBES | PRICE
LOAN SET | TOTAL PARTS | TOTAL TUBES
*REP'D BY | OK BY
SUMMARY OF CHARGES
PARTS $
TUBES-PARTS $
LABOR $
TOTAL $
TAX $

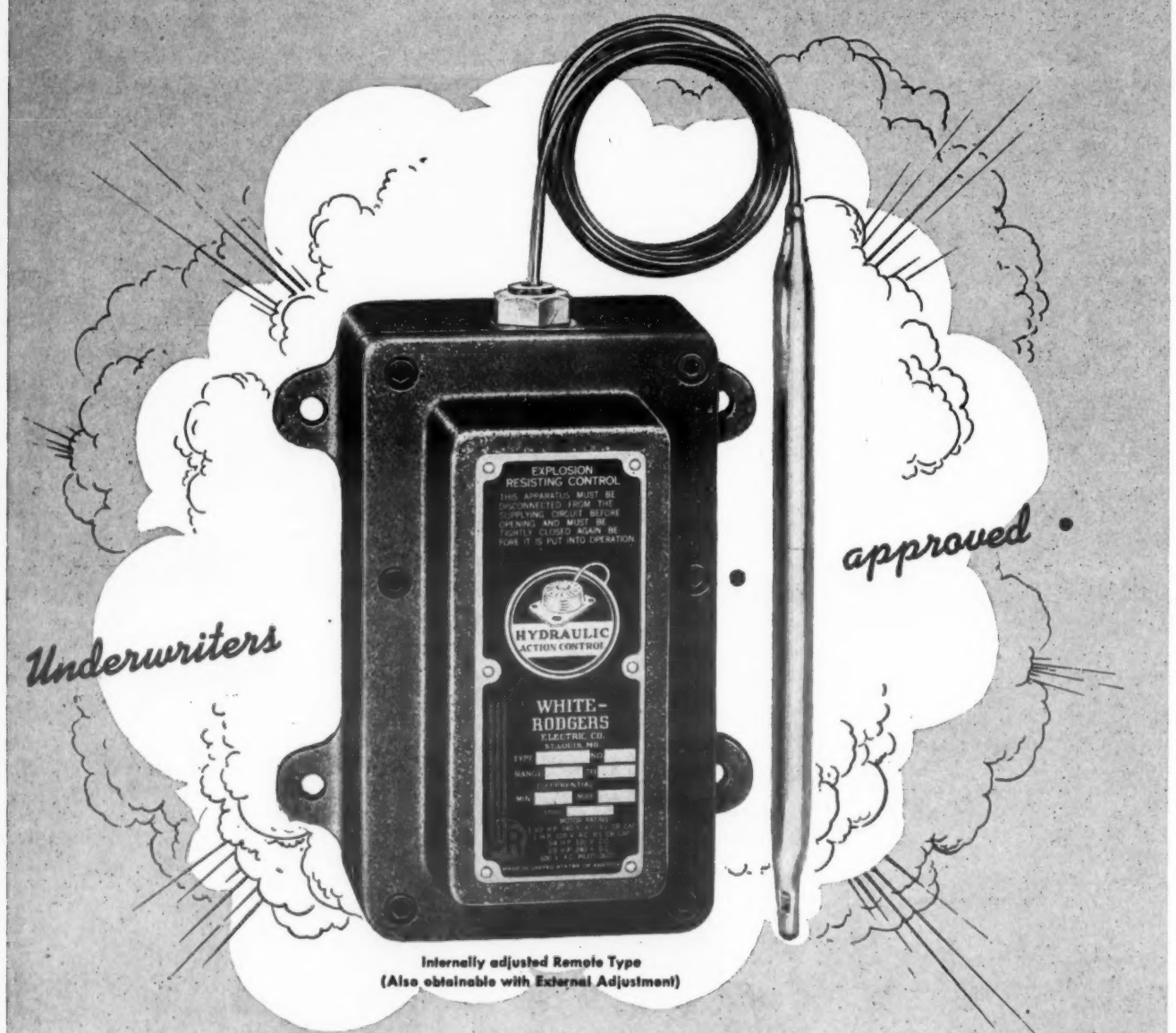
RECEIPT
(Customer Claim Check)
DATE
ACCEPTED FOR REPAIR * ONE
RADIO SET ( ) CHASSIS ( )
MAKE
MODEL OR SERIAL
INDEPENDENT
Radio & Television Service
Washington, Pennsylvania
BY
*NOT RESPONSIBLE FOR LOSS BY FIRE

SERVICE INVOICE
SSSS SERVICE CO.
505 RAYMOND AVE.
PITTSBURGH, PA.
PHONE 1472-J NO.
DATE
NAME
ADDRESS
PRODUCT
MODEL SERIAL No.
COMPLAINT
WORK DONE
PARTS USED:

QUANTITY	STYLE No.	DESCRIPTION	EACH	TOTAL

SERVICEMAN MATERIAL
DATE SERVICED LABOR HRS. AT PER HR.
PAID TOTAL CHARGE
Per
Customer's Signature
TERMS: NET CASH ON COMPLETION OF WORK

WHITE-RODGERS
Explosion-Proof Thermostats
FOR HAZARDOUS LOCATIONS



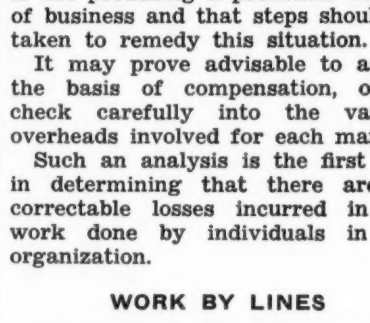
Internally adjusted Remote Type
(Also obtainable with External Adjustment)

Especially recommended for use in oil refineries, munitions plants, powder magazines, grain elevators, flour mills, mines and all locations where explosive fumes or dusts are present.

Underwriters approved, both self-contained and remote bulb type controls are available in standard ranges to cover any type of application. External knob or tamper-proof internal adjustment available in both fixed and variable differential types. Write today for further information.

WHITE-RODGERS ELECTRIC CO.
1211j Cass Avenue . . . Saint Louis, Mo.
CONTROLS FOR HEATING • REFRIGERATION • AIR-CONDITIONING

ANSUL
—SULPHUR DIOXIDE—
Used more widely because there are more reasons for its being used.



. . . in carloads or handy-size cylinders

AC-57
ANSUL CHEMICAL COMPANY
Marinette • Wisconsin
PROMPT, EFFICIENT SERVICE THROUGH ANSUL JOBBERS AND SERVICE MEN NEAR YOU
Save Steel FOR VICTORY BY RETURNING EMPTY DRUMS PROMPTLY.

How To Use New Forms To Collect & Analyze Data on a Service Business

(Continued from Page 6, Column 5)

known, establishing a budget for the desired operation, and then directing the work towards this goal, is a practice that is usually profitable.

The form West Penn has prepared provides space not only for the monthly budget and the actual results for direct comparison, but also for cumulative totals for any desired period.

"If a service operator or dealer decides to use the forms," says Wm. D. Peters, manager, dealer promotion secion, "we suggest the following precedure:

"1. To use the appliance service budget and operations comparison, set up a budget for the coming month estimating income and direct expense based on experience. Figures for other expense can be obtained from the books. In order to establish a figure for taxes and insurance, we suggest that last year's costs be used as a basis for estimating, and that the total be divided equally for each month of the year. While this is not an accurate figure, it serves to get the dealer accustomed to thinking about these items in terms of his daily operation.

"2. The Daily Record of Appliance Service should be posted daily from the work orders. The totals may be compiled for any period desired. We have already found out from dealers who are using this form that they seem to have no uniform method of markup on cost to arrive at a billing price to the customer. We are suggesting that for the purpose of arriving at a standard markup when the totals are analyzed, 20% of the total revenue be added to the total costs, in order to have some yardstick. At the end of the month, it is possible to fill in the actual figures on the Appliance Service Budget and Operations Comparison from the Daily Record of Appliance Service and the books. After three or four months operating this system, it should be possible to bring the budget and actual figures in line. Seasonal variations can be accounted for the second year the system is in operation.

"3. The Appliance Service Analyses can be made up from the Daily Record of Appliance Service. As is evident, it seems to provide a comparison of the productivity of servicemen, a comparison of revenue and profit by lines, and a comparison of shop and outside work.

"In addition, we are suggesting that a simple graph be set up for the dollar volume by months so that the dealer can plan advertising specials during the valleys. The analysis of work by lines will help in selecting these specials."

Appliance Service Budget & Operation Comparison

INCOME SERVICE REVENUE AND CREDITS	MONTH OF BUDGET	MONTH OF ACTUAL	NO OF MONTHS BUDGET	NO OF MONTHS ACTUAL
Outside Domestic Service				
Shop Domestic Service				
Commercial Service				
Allowances From Manufacturers				
Miscellaneous				
TOTAL SERVICE REVENUE				
EXPENSES				
DIRECT EXPENSES				
Wages—Outside Domestic Work				
Wages—Shop Domestic Work				
Automobile Operation				
Refrigeration Unit Replacements—Allowance to Customers				
Replacement Parts Used in Domestic Service				
Wages—Commercial Service				
Replacement Parts Used in Commercial Service				
Other Materials Used in All Service				
Miscellaneous				
TOTAL DIRECT EXPENSES				
OTHER EXPENSES				
Rent				
Electricity, Heat, Telephone, and Water				
Insurance, Taxes, Etc. (Pro-Rated)				
Supervisory Salaries				
Clerical Salaries				
Advertising				
Shipping Expense				
Miscellaneous (stationery, office supplies, postage, etc.)				
TOTAL OTHER EXPENSES				
TOTAL ALL EXPENSES				
NET REVENUE				

Forms For Analyses of Service Work

APPLIANCE SERVICE ANALYSES

Period.....

ANALYSIS OF WORK PER MAN

Service Man	Gross Revenue	Total Wages	Tot. Cost Material	Auto Expense	Tot. Direct Expense	Gross Profit	No. Jobs	Avg. Gross Profit Per Job

APPLIANCE	ANALYSIS OF WORK BY LINES
Radios	
Ranges	
Refrigerators	
Small Appliances	
Commercial Refrigeration	
Miscellaneous	

TYPE OF WORK	ANALYSIS OF SHOP AND OUTSIDE WORK
Outside Domestic Service	
Shop Domestic Service	
Outside Commercial Service	
Shop Commercial Service	

'Daily Record of Appliance Service' Form - - Also a Journal, If Desired

DAILY RECORD OF APPLIANCE SERVICE

KEY A OUTSIDE DOMESTIC SERVICE
B SHOP DOMESTIC SERVICE
C COMMERCIAL SERVICE

DATE	JOB NO.	APPLIANCE	NATURE OF WORK	SERVICE MAN	LABOR COST HRS	LABOR COST AMT	TRAVEL COST MILES	TRAVEL COST AMT	MATERIAL COST AMT	TOTAL COSTS	REVENUE CASH	REVENUE CHARGE	KEY	REMARKS

Air Conditioning & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office;
Established 1926 and registered as
Electric Refrigeration News

F. M. COCKRELL, *Founder*

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Refrigeration Will Help
Win the War

The Case for Parts And Manpower

THIS industry now has two important—almost desperate—problems facing it. Their solution lies in the lap of "Washington." They are: manpower and repair parts.

We have repeatedly tried to emphasize their importance in the NEWS. But nowhere have we seen "the case" summed up any better than in the two letters which follow. They were prepared by the Refrigeration and Air Conditioning Association of Cincinnati —a group of patriotic men who are smack up against these problems in their everyday business life.

We quote:

MANPOWER COMMISSION ASKED TO CLASSIFY SERVICE MEN

Mr. Paul V. McNutt, Chairman,
United States Manpower Division,
Washington, D. C.
Dear Sir:

We wish to call to your attention a trade which is most vital in the war effort, yet has apparently been overlooked in the recently issued deferment classifications. We refer to the trade of commercial refrigeration service and repair—a trade upon which the responsibility of preserving food stores for our entire nation rests. Furthermore, the war production program has uncovered innumerable new and vital refrigeration applications which daily speed up production and make possible better quality equipment. Included in these newer refrigeration applications are installations such as:

1. Zero degree storage cabinets for rivet containers in airplane plants.

2. Water cooling for development of X-ray films used in detecting flaws in metals and materials.

3. Brine cooling for the distillation of chemicals used in the manufacture of explosives.

4. Blood banks and blood plasma production equipment.

5. Constant temperature rooms for gauge laboratories and innumerable testing departments.

6. Air conditioning of drafting rooms and other key spots in manufacturing establishments.

7. Refrigeration of oils used in machine tools.

8. Refrigeration of spot welding machine tips— an application which has increased welding production approximately 300%.

9. Cooling of anodizing bath enables greater protection of aluminum.

10. Variable temperature rooms used for testing defense weapons in varying degrees of heat and cold (aircraft radio equipment, flying instruments and similar devices).

11. Cold temperature shock tests to check crack or fracture of shells.

12. Cooling of wax used in grinding of optical lenses increases production.
and additional applications which are too numerous to cover in a letter.

While these special jobs are today to be found in practically every manufacturing establishment producing war materials, an equally important responsibility rests upon the shoulders of commercial refrigeration service-men in the safeguarding and protecting perishable foods for all human life—whether soldiers, sailors or civilians. Furthermore, the construction and expansion of war plants throughout the country has likewise expanded the need of refrigeration in factory cafeterias, new communities housing defense workers and larger storage warehouses. That commercial refrigeration and air conditioning work is recognized as vital to the welfare of our nation, is evidenced by the fact that the War Production Board has set up a separate Air Conditioning and Refrigeration Branch to facilitate the procurement of materials for maintenance of this type of equipment.

It is seldom recognized, except by those closely associated with the refrigeration business, that it requires five years of extensive training to produce a capable commercial refrigeration serviceman. This fact is likewise recognized by the Refrigeration Workers and Service Division of the American Federation of Labor, as a full five year training is required before a journeyman's rating is permitted. Obviously, the refrigeration industry is already experiencing a serious manpower shortage because of the greatly expanded field for refrigeration and the numerous installations recently required in our war program. Our situation is further aggravated by the fact that many refrigeration workers have accepted higher paying positions as steam fitters, electricians, etc.

In the interest of maintaining maximum efficiency and maximum production in our war effort, we request that you grant to the commercial refrigeration service trade the same recognition that has been granted to other trades actively engaged in war work. In fact, it is our sincere belief that the maintenance of commercial refrigeration equipment presents an even more serious problem than the procurement of man-power for our defense plants. As mentioned above, it requires five years to train a commercial refrigeration serviceman; certainly it does not require this length of time to train a man to run a lathe, milling machine and other similar equipment. According to reports reaching this association, serious difficulty is already being experienced in many locations because of inability to procure adequate refrigeration service (details upon request). Certainly it is imperative that immediate steps be taken to assure a retention of present personnel. We most sincerely and conscientiously recommend the granting of a 3-B classification, or better, to the men who are engaged in commercial refrigeration work.

EARL W. SEIBERT, President.

PRIORITIES PROBLEMS WITH USE OF P-126 ARE EMPHASIZED

War Production Board,
Washington, D. C.
Gentlemen:

We are wondering if you gentlemen are cognizant of the scope and magnitude of the commercial refrigeration business and its importance in maintaining bare essentials of civilian life. Practically every retail and wholesale establishment is dependent upon refrigeration in some form. Furthermore, the war program has uncovered innumerable new refrigeration applications and it is imperative that the refrigeration equipment be maintained at its highest efficiency.

At the present time under Preference Rating Order P-126, our associate members who are licensed are permitted to use A-3 priority for emergency repairs. However, the most essential materials and parts are not obtainable with an A-3 rating because of item "D" Restrictions on the Use of Ratings in Preference Order P-126.

It is the inability to obtain these items which will cause the severe dislocation and loss of many perishable items in the very near future. For example: At the present time it requires an A-1-C, or better, to obtain an electric motor; an A-1-K, or better, to obtain copper and necessary parts to repair a motor. We are practically out of copper for repairing motors and we do not have a sufficiently high priority to be able to buy new motors and materials. Any customer who is unfortunate enough to have his motor burn out will lose through spoilage his stock of perishables because of our inability to replace that item quick enough. Our inability to replace an expansion valve or any part of his refrigeration system will be equally as serious. Our stock of parts, valves, motors, and controls has reached the bare minimum and within the next several months will be entirely depleted. The majority of these cannot be obtained from the manufacturer without an A-1-K, or better.

It is our understanding that by this time next year there will be a very great shortage of perishables. Certainly it will be to the country's interest to grant us a sufficiently high priority to enable us to carry a minimum service inventory in case of a failure in a refrigeration plant. When commerical refrigeration plants fail, we do not have time to make an application for special priority.

We are sure that you can appreciate the situation and we urge you to make every effort to see that a sufficiently high priority is granted on commercial refrigeration service and repairs.

A. BACHMAN, Secretary.

Planning is said to be the key to our successful prosecution of the war. And it is in the failure to *plan ahead* against breakdowns that "Washington" has been most criticized. Well, here is a situation which can't wait any longer for some *planning ahead.*

Refrigeration service *manpower* is running out rapidly. Stocks of refrigeration *repair parts* are running out rapidly. Further delay in protecting the supply of both will be dangerous to the nation and to the prosecution of the war.

They'll Do It Every Time . . . . . By Jimmy Hatlo

ARSON DID MORE WHINING ABOUT THE SERGEANT'S ORDERS THAN ANY PRIVATE IN THE OUTFIT—
OH, HOW I HATE THAT SERGEANT! THE BIG FAT-HEAD-GOING AROUND GIVING ORDERS JUST TO HEAR HIMSELF TALK! WHAT DOES HE THINK I AM-A DOG? THERE'S A LIMIT TO HUMAN ENDURANCE.
—AND SEE THAT YOU DO IT THAT WAY, AFTER THIS.
Thanx to MANY CONTRIBUTORS
—BUT WHEN HE, SOMEHOW, GOT THREE STRIPES ON HIS SLEEVE - WOW! SIMON LEGREE WAS JUST A PIKER.
C'MON! C'MON!! GET THE LEAD OUT OF YOUR FEET! D'YA THINK YOU'RE ON A PICNIC? PUT IT DOWN HERE!
JIMMY HATLO
8/14
Copr 1942, King Features Syndicate, Inc., World rights reserved.

LETTERS

SERVICE FIRM NEEDS BETTER RATING FOR WIRE

Franklin Electric Shop
206 Franklin St.
Christiansburg, Va.

Editor:

We have written to Washington and Richmond in regard to priorities, and finally did get Form P-126 to fill out, which we did, but have had no reply whatsoever.

Our supplier tells us we must have A-1-j or A-1-k for wire which we need badly for rewinding motors for the farmers' water pumps and the dairies.

We have the only electrical repair shop in the Radford Defense Area, so you can see what we are up against.

Harry Franklin, Manager

ERNIE CONDON REPORTS FROM SOMEWHERE IN AFRICA

Flushing Refrigeration Co.
(Formerly located at Flushing, N. Y.)
Now: Somewhere in Africa

Editor:

Your letter dated July 15 received here in Africa Aug. 10 and I want to tell you that I was darn glad to get it. The only thing I'm sore at you for is that you did not enclose the latest issue of Air Conditioning & Refrigeration News. Now what are you going to do about it?

How do you like my new letterheads and my African typewriter? We sure go to town over here. Ha!

The above, in all seriousness, is just to prove that we Americans can be thrown into any country of the world, take everything (some of it is tough), and still retain our sense of humor.

Now to get down to business as follows:

I wish to thank you in advance for your kindness in mailing me a couple of copies of "Buyers' Guide." You would be surprised to what use we will put them.

As to any other information or material you may mail me, kindly be advised that here in Africa we really are without any technical information on recent developments in air conditioning and refrigeration.

With the above in mind, use your good judgment and I will be thankful and grateful for everything. The only thing I must ask is, whatever charges or costs, I will have to remit at a later date.

I just got back from a four-day trip, and do feel a little tired out. On one of my stops, it will be very interesting for the refrigeration trade in general to know just what air conditioning has done in one case.

One of our projects is located in a very torrid place, the temperatures being 105°-128° daily, night temperatures varying from 89°-102°. Men were being put in rest camps (located in cooler temperatures) for prickly heat rashes. We installed air conditioning units in the dormitories and reduced the condition to nil. I wish it was possible to here state just how many labor hours this has saved for Uncle Sam.

I have just finished putting into operation an ammonia job that the enemy boasted would never run again. Mister, that job is working 100% and **not one** American part in it, repaired as original. And they think they are going to stop us! When they can't stump us, how in hell can they stop us? Phil, it just can't be done.

The amount of labor and things I have done could never be put in a short letter like this; sorry, mister, you'll have to wait for the rest of the story. Hope to give it all to you someday.

To insure rapid delivery of mail, etc., in the future, please address your mail c/o Johnson, Drake & Piper, Inc., A.P.O. 617, c/o Postmaster, New York, N. Y.

With personal regards to you, best wishes to the boys, and expectations of possibly giving you more information as to just what part we refrigeration men are playing in the war.

Ernest E. Condon

ERROR IN PRIORITIES REPORT ON DAIRY ORDER P-118

Frigidaire Products of Canada, Ltd.
Leaside, Ont., Can.

Editor:

In your issue of Sept. 7 you have an article headlined as follows: "Dairy Order P-118 Is Good Only for Primary Processes." In the second paragraph of this article you state "preference ratings under this Order are **now** available for secondary operation."

I have checked with the Priorities Branch in Ottawa and, so far, they have not received any information to this effect.

I am wondering if this is a typographical error and should read: preference ratings under this Order are **not** available.

I would appreciate your advising which is correct.

K. Wood, Sales Supervisor

Answer: The alert Mr. Wood found an error in the News. It should have read **not** available.

What Dealers Are Doing About Merchandise Shortages

How Denver Firm Converted All Its Sales Facilities Into an Appliance Service Setup

DENVER—Although many department stores which formerly enjoyed large refrigerator sales volumes are now converting the former show rooms over to unpainted furniture, housewares, etc., the Denver Dry Goods Co. here is going the other way —and is pushing complete service work aggressively.

Formerly, the service shop was devoted entirely to maintaining the operation of washing machines, ranges, refrigerators, etc., sold to the store customers—taking on no outside work whatsoever. Now, however, it is the purpose of the store to make service pay its way, and to enter the appliance service market on a competitive basis.

A crew of two men for each appliance is provided in the fourth-floor radio, small appliance, and major appliance shop, and more men are available at the company warehouse, where there is a complete paint-spray booth, facilities for charging refrigerators, tearing down and boiling off old finish, etc. Complete repair work on radios and refrigerators will be featured at both shops, and the warehouse will accommodate all complete overhauls, ranges, washing machines, etc.

For outside service which requires a service mechanic leaving the store to the customer's home, there is a flat rate of $1.50 for the call, and $1 per hour after the first hour. This rate is slightly lower than that extant in Denver, having been set for the store's own customers, but will probably be raised somewhat in the next few months, according to L. A. Durbin, manager.

A former store delivery truck will be used in instances where the repair man goes to the customer's home. Men will wear white overalls, carry a white canvas cloth to cover the floor while working on the box, and will give the customer the option of simply having the service charge applied to her charge account if she wishes.

Complete repairs and overhauls to electric refrigerators will be offered at prices of $25, $35 and $45, the tuned-up and adjusting work being done at the store, and spraying of the cabinet at the warehouse.

"We have a lathe, metal, and all equipment for making our own parts if necessary," Mr. Durbin said, "and believe that the service department will be a larger asset to the store during the war than it was when we carried a stock of more than 200 refrigerators at a time."

Survey Indicates Wide Variety of 'Wartime' Merchandise Opportunities

NEW YORK CITY—Opportunities still exist to develop additional services of wartime use to consumers, to expand some sections thus offsetting those which may have to be closed, and to merchandise substitute lines, according to retail authorities here.

Severe merchandise shortages and a narrowing consumer goods economy may force major merchandising curtailment and the closing of many retail departments or stores.

But, the authorities say, it would be a mistake at this time for merchants to foster a policy of contraction in retailing.

It was pointed out that the large store can better afford to weather the contraction of supply of goods or selling. However, the implications of contraction for both large and small merchants were described as "deadly." Even under the difficult conditions which may loom up, imagination and merchandising resourcefulness are still capable of yielding desirable results.

For example, departments may be expanded or new ones added. A survey recently indicated experimentation was being done or planned by alert retailers with these departments: Basement and upstairs sections for work clothing, electrical appliance repair department, unpainted furniture, groceries or specialty foods, low-priced shoes, clothing, and equipment for air raid protection, work gloves, adult games, conservation services such as shoe, handbag, and hosiery repair; home tool kits and second hand furniture.

Expansion of departments to replace others was suggested in one instance by the gradual absorption by a blackout section of the space formerly occupied by electrical refrigerators, and in the case of stoves and similar appliances by a wider array of unpainted furniture.

In another case, a former appliance dealer was said to have set up a profitable rebuilding department for electrical appliances at an investment of $1,000.

One retail executive here said he believed the possibilities for increasing volume on certain types of soft goods have not been fully capitalized. He mentioned house dresses to sell up to $5 as an outstanding example.

Another merchant, who visited the wholesale markets here recently, cited an instance in work gloves. One of the general merchandise chains in this retailer's Middle West city was found to be doing an extremely heavy business in work gloves.

Investigation showed the chain was carrying no less than 48 different kinds of gloves to meet all requirements of the use of such gloves and was cashing in on the heavy demand due to war work. This merchant said he was now carrying 40 of the 48 varieties stocked by the chain, and the work glove business had taken a swift upward trend.

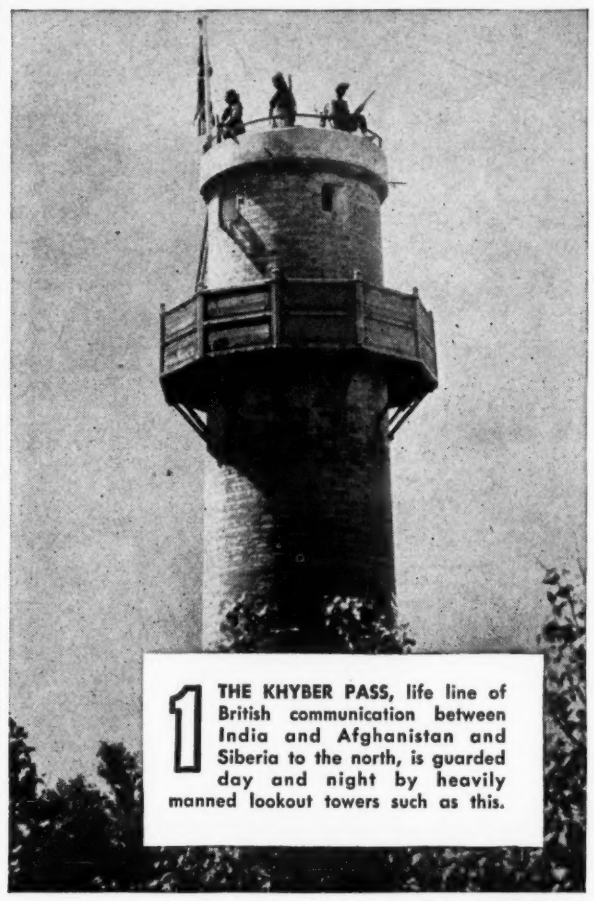
Stern Takes Distributorship For Coolerator Refrigerator

HARTFORD, Conn.—Stern & Co., electrical appliance distributor here, has been appointed Coolerator ice refrigerator distributor for the Connecticut, Western Massachusetts and Vermont areas. The company has also added furnishings, furniture polish, glassware, art gift lines and plastic refrigerator ice cube trays.

Milwaukee Appliance Co. Distributes Granulated Soap

MILWAUKEE — Roth Appliance Co., appliance distributor here, is selling a specially manufactured granulated soap given the name "Rad" as one of the most unusual "substitute lines" to be taken on.

FAMOUS LIFE LINES



1 THE KHYBER PASS, life line of British communication between India and Afghanistan and Siberia to the north, is guarded day and night by heavily manned lookout towers such as this.

International Newsphoto

2 U. S. ARMY EXPEDITIONARY GAS CANS, used by the hundreds of thousands wherever there are gas propelled military vehicles, tanks or aircraft, have their life lines —their air vent tubes—of Bundy Tubing.

Press Association, Inc.

NEW USES, new life lines, new roles of vital importance for Bundy Tubing increase as war production grows. From Army gas cans to smoke bombs, from "walkie-talkies" to tractors and tanks, Bundy Tubing is on the job . . . in new types and new sizes . . . accepted as standard for strength, ductility and resistance to vibration fatigue.

Lubrication lines for mine sweeper and "mosquito" boat power plants, for searchlight units and gun carriages . . . fuel lines for tank destroyers and cargo trucks, for weapon carriers and armored cars . . . hydraulic brake tubing and control tubing for heavy Army wreckers, for reconnaisance and command cars . . . rip cord grips for parachutes, control tubes for propellers, shade rib support tubing for magnesium parachute flares . . . structural tubing for aircraft and gliders . . . these are but a few of hundreds of new war applications of Bundy Tubing.

If you need tubing for your war products, be sure to get the complete story of Bundy Tubing's adaptability, its wide range of sizes and the splendid research facilities and cooperation offered you by Bundy's Engineering Department. Bundy Tubing Company, Detroit, Michigan.

BUNDY TUBING

ENGINEERED TO YOUR EXPECTATIONS

BUNDYWELD double-walled steel tubing, hydrogen-brazed, copper-coated inside and outside. From Capillary sizes up to and including 1/4" O. D. This double-walled type is also available in steel, tin-coated on the outside, and in Monel.

BUNDY ELECTRICWELD steel tubing. Single-walled — butt welded — annealed. Available in sizes up to and including 2" O. D. Can be furnished tin-coated outside in smaller sizes.

BUNDY "TRIPLE-PURPOSE" tubing. Double-walled, rolled from two strips, joints opposite, welded into a solid wall. Available in all Monel; all steel; Monel inside—steel outside; Monel outside—steel inside. Sizes up to and including 5/8" O. D.

71% of Chicago Dealers Prepare to 'Stick It Out'

CHICAGO — More than 200 appliance retailers in this city have moved from large, expensive showrooms to small shops off the main avenues, according to a recent survey of the Better Business Bureau.

The Bureau found that instead of going out of business, 71% of Chicago's appliance retailers are planning to reduce overhead and get by on service or sidelines until the war is over. Most of the 29% who closed up did so to enter military or naval service.

Clor Directs Meyer Stores

MILWAUKEE — J. J. Clor, a veteran housefurnishings and furniture dealer here, has been placed in complete charge of all Meyer Stores here, formerly large-scale appliance dealerships. The stores have switched entirely to furniture, rugs, housewares, and gas ranges.

Philadelphia 'Rebuild' Campaign a Success

PHILADELPHIA—A total of 1,800 electric refrigerators including some commercial equipment has been reconditioned and resold by appliance dealers operating service shops here since the beginning of the "Fix Em Up—Make Em Do" citywide campaign last May. All dealers who entered into the plan, sponsored by the Electrical Association of Philadelphia, have been successful in profitably operating their shops without conversion.

Joy's Buys Out Nolde

NEW ORLEANS — The Nolde Furniture Co., large Norge dealership at 213 N. Rampart St. here, has been purchased by Joy's, Inc., large furniture chain, at a price of $500,000. Joy Hauck, president of Joy's, Inc., will change over the store to a modern furniture dealership and an appliance service shop.

Retail Financing Falls Off 57% Since March

WASHINGTON, D. C.—Volume of retail financing by sales finance companies has declined 57% showing the sharp decline in sales of consumers' durable goods on the installment plan since March, as a result of credit restrictions and product shortages.

Latest figures from the Bureau of the Census of the Department of Commerce indicate that from a figure of 100 in January the index of diversified retail financing had jumped to 137 in March, but fell to 59 by the end of July.

The largest decrease from June, 47%, took place in refrigerators. The Commerce Department index is now 34 as against 250 in March, and 100 in January.

The financing of other household appliances dropped 32%, the index now being 31 as against 46 in the previous month, 169 in March, and 100 in January.

DUPONT

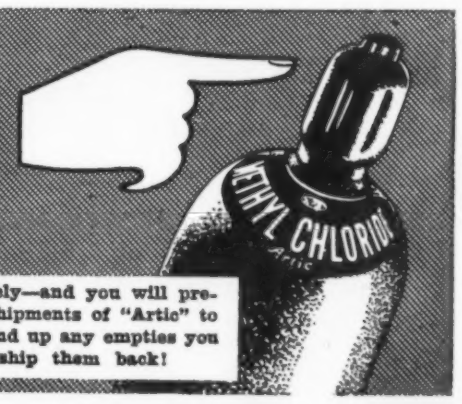
Artic

REG. U.S. PAT. OFF.

For information about nearest source of supply, write to ELECTROCHEMICALS DEPARTMENT E. I. DU PONT DE NEMOURS & CO. (INC.) Wilmington, Delaware or National Ammonia Division Frankford P. O. Philadelphia, Pa.

TO ASSURE QUICKER DELIVERIES RETURN EMPTY CYLINDERS PROMPTLY!

There is a shortage of cylinders for refrigerants. If you will return your "Artic" Methyl Chloride containers as soon as empty, your deposits will be repaid immediately—and you will prevent delays in shipments of "Artic" to your shop! Round up any empties you have now and ship them back!



Let's Roll up Our Sleeves

AND LICK THIS JOB

It's a man-size job... this business of keeping America's refrigeration and air conditioning equipment in operation for the duration. The main task is to save what we have... make it operate efficiently... make it last as long as possible.

That puts a heavy load on service... and the size of the job calls for the best efforts of everyone in the industry. Penn was among the first to pledge support to the Program for Victory, and we will maintain this support to the best of our ability.

Automatic controls must be skilfully and thriftily serviced. We are prepared and willing to co-operate with you in solving unusual service problems. And where existing controls cannot be made to function properly, we can supply new controls under existing priority rules. *Penn Electric Switch Co., Goshen, Indiana.*

PENN CONTROLS

REFRIGERATION AIR CONDITIONING ENGINE HEATING PUMPING AND AIR COMPRESSOR

WAGNER MOTORS

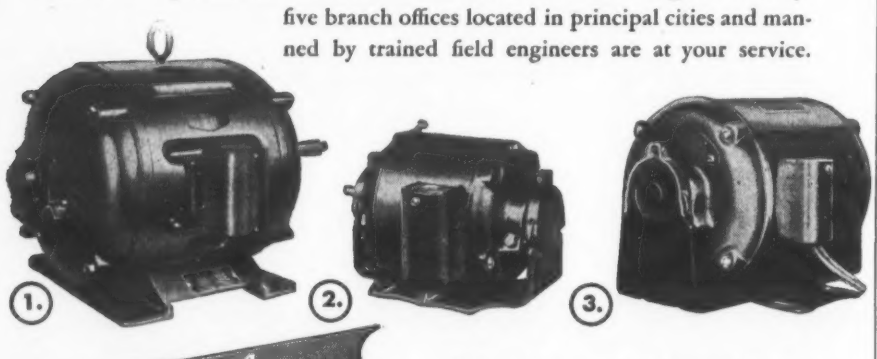
give MAXIMUM *efficiency*

ON REFRIGERATING AND AIR CONDITIONING EQUIPMENT THAT GOES INTO *War Service!*

Because Wagner motors have proved their reliability and efficiency in pre-war days on all kinds of motor driven equipment, thousands of them have already gone into war service. Today you will find Wagner motors driving all types of refrigerating and air conditioning equipment in war industries, army cantonments, navy yards, air fields, and on ships—delivering the same dependable service that has established Wagner's outstanding reputation for high-quality motors.

Wagner's plant is working day and night, turning out more motors now than ever before, and are supplying these dependable motors wherever they are needed to help in our "all-out" war effort.

If the equipment you manufacture or install is motor driven and essential to war production or to the armed forces—consult Wagner. Twenty-five branch offices located in principal cities and manned by trained field engineers are at your service.



1. Type RP, Squirrel-Cage Polyphase Motor. Of simple construction, easily installed, and exceptionally sturdy and dependable. 1/6 to 400-hp.
2. Type M, Shaded-Pole Fan Motor. For fans and blower drives where the fan or blower drives are mounted directly on the motor shaft. 1/125, 1/80, 1/40 and 1/30-hp.
3. Type RA, Repulsion-Start-Induction Motor. The ideal motor for heavy-duty single-phase applications. 1/8 to 15-hp.

Remember— SERVICE FOR THE DURATION IS OF PARAMOUNT IMPORTANCE

In times like these, when many manufacturers of electrically driven equipment have converted their plants to the manufacture of victory materials, it is good to know that the motors driving their equipment in the field will not want for service. Wagner's 25 sales and service branches are on the job in all parts of the country to help you keep your products in continuous service, no matter where they are.

Send for DESCRIPTIVE BULLETINS..

Wagner Electric Corporation
6400 Plymouth Avenue, Saint Louis, Mo. U.S.A.

Gentlemen: ACARN M42-22

Please mail me FREE Bulletins MU-182 and MU-183.

Name _____ Position _____

Firm _____

Address _____

City _____ State _____

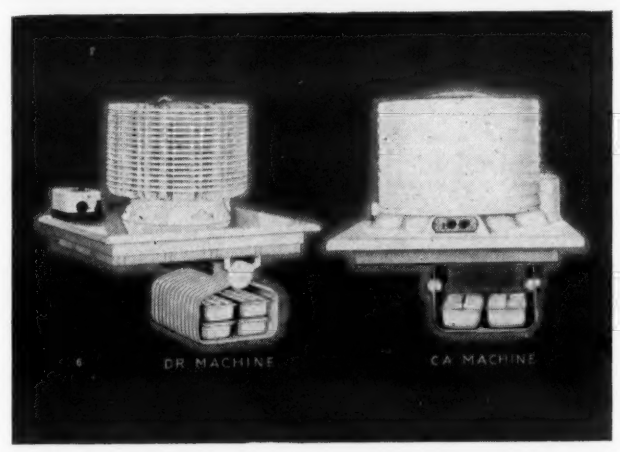
Servicing the G-E Scotch Yoke Refrigerator Machine

From the General Electric Service Dept. Educational Film of the Same Name

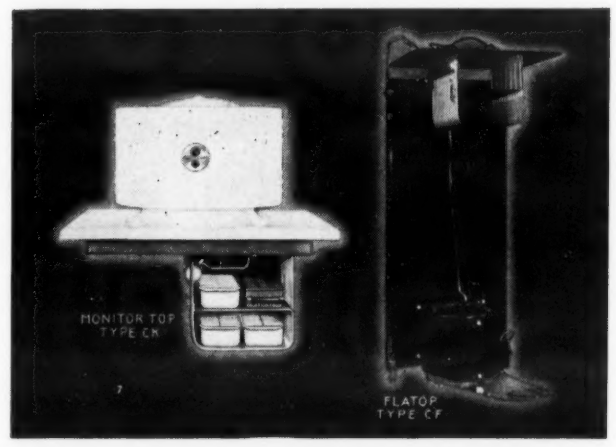
Editor's Note: The following material is a published version of "Servicing Scotch Yoke Machines," originally presented as a sound slide film produced by the Product Service Division of General Electric's Appliance and Merchandise Department as a basic training film on the more current types of General Electric sealed refrigerating machines. It was planned so as to be easily understood by new service men and at the same time interesting and helpful to those having more experience.

The material will appear in instalment form in the regular issues of AIR CONDITIONING & REFRIGERATION NEWS, by permission of the General Electric Co.

While the film was only a part of the educational material provided, around it was built the program presented by General Electric distributors at a national series of service training meetings during June. The service story from the film is being published in the NEWS for the benefit of those who may be called upon to service these machines, but who did not attend these meetings.

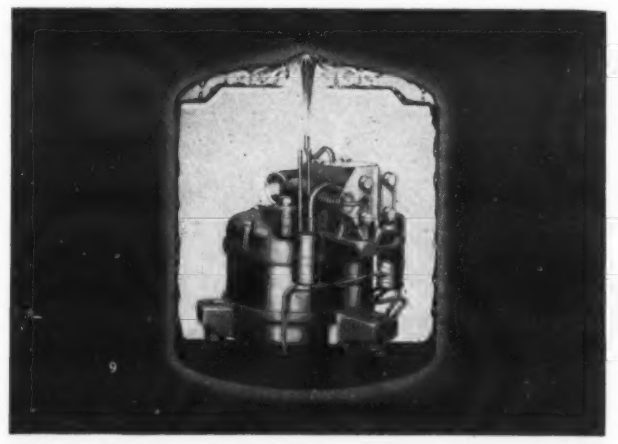


(6) Since 1927 there have been three basic types of sealed machines, the DR type from 1927 to 1933; the CA type during 1933 and 1934—



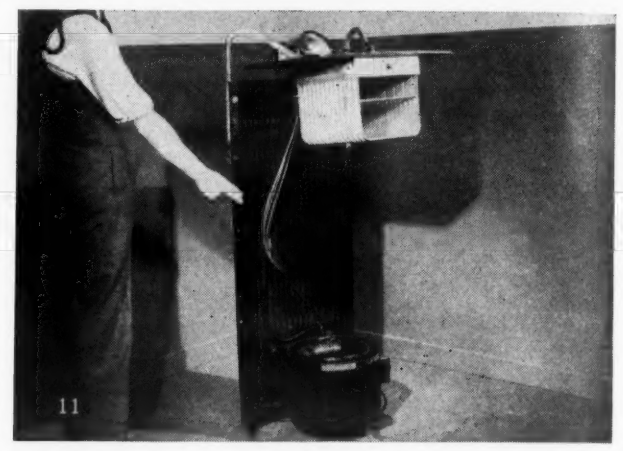
(7) And the Scotch Yoke Type since 1934, of which there are both Monitor Tops and Flatops. In this first refrigeration service film, we will discuss in detail the Scotch Yoke type of machine. However, many of the fundamental principles shown here will apply to the earlier models.

(8) Let's see just what a sealed machine is, and why it has proven so dependable over a long period of years. We have a motor and compressor that are completely sealed in a metal case, so that no air, dirt or moisture can get in, and no oil or refrigerant can get out.

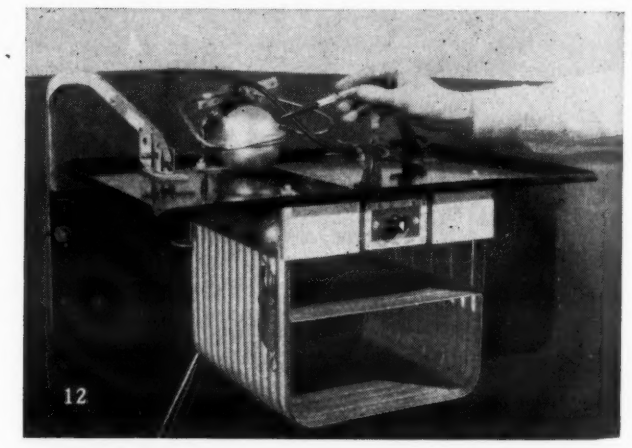


(9) Oil under pressure is pumped to all moving parts. It cools the motor and operates the unloader mechanism which allows the machine to start and stop under no load.

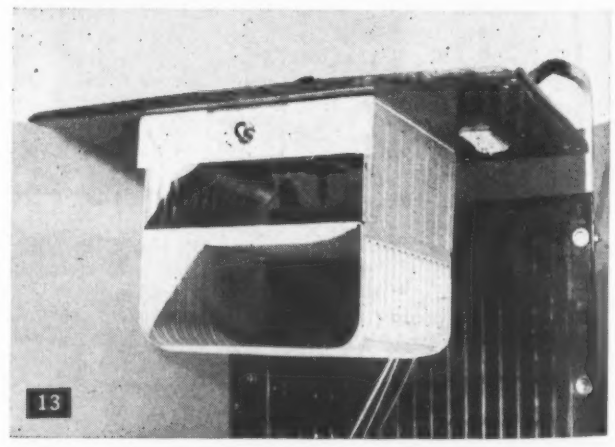
(10) The compressor pumps the refrigerant through the system and compresses it—



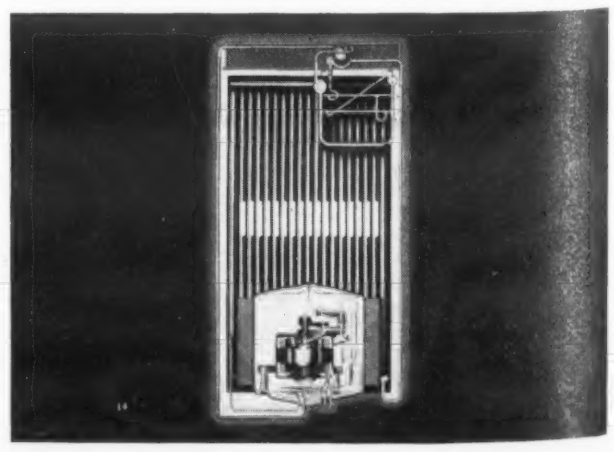
(11) So that it can be liquefied in the condenser.



(12) The float valve controls the flow of liquid refrigerant from the condenser into—



(13) The evaporator, where it becomes a vapor. This change takes place because the pressure in the evaporator is continually reduced by the compressor.



(14) When the refrigerant changes from liquid to vapor, considerable heat is absorbed, and the entire evaporator becomes cold. Therefore, the cycle of operation consists of: first—compression; second—cooling and liquefying; and third—evaporation. During the process of refrigeration this cycle occurs over and over again.

Power Taken from Rear Wheel to Furnish Refrigeration for Meat Trucks

The power take-off system used on Central Truck Lines trucks is shown on the rear wheel. C. E. Mendez, who developed the system, is in the center of the group.

* * *

TAMPA, Fla. — Central Truck Lines, which recently established a refrigerator truck service for Florida and Georgia meat packers, have equipped their trucks with a self-powered refrigerating unit which is driven from the rear wheel.

The system eliminates the use of small individual gasoline motor and is the invention of C. E. Mendez, mechanical superintendent for the Herman Sausage Factory, Tampa, and has been in use on their trucks for four years.

Most of the trucks refrigerated with the device are 26-foot transports with four-inch insulation and equipped with four Kold Hold plates. The compressor unit is mounted beneath the floor of the transport and near the back wheel and takes its power off the wheel through a V-belt. A guide and idler pulley insures steady delivery of power through all road conditions.

Belts last from 50,000 to 90,000 miles. When the truck is not on the road the refrigerating unit is plugged into the nearest light socket and driven from an electric motor.

Climatic conditions are severe in southern Florida and yet the rear-wheel drive has been able to maintain good temperature, according to P. A. Tarnow, vice president and general manager of the Herman factory.

"We are able to hold pork sausage in our peddling trucks four or five days without having it lose its bloom," he declared.

Bugaboo of self-drive refrigeration systems is the fear the trucks will warm up because of frequent stops and door opening. Mr. Tarnow said they maintained safe temperatures with as many as 50 stops.

A recent run from Tampa to Miami was used as a check. While loading the electric motor was plugged in and the door closed at 56° F. In 55 miles out, temperature was 42. Two hundred miles from Miami it was 40° F. There some of the load was unloaded and the door was open for 30 minutes. It was closed at 52° F. The truck was opened 50 miles from that point and the temperature was 42. Several other stops were made and the truck returned to Tampa where the temperature checked 40° F.

Gasoline Unit in Each Truck Cools Ice Cream Enroute

ALBUQUERQUE, N.M.—Although reductions in the use of electrical current and going out of business of many former stops at which electrically-powered truck refrigeration could be plugged in has made it difficult to properly refrigerate ice cream over long rural areas, the Creamland Dairy Co., ice cream manufacturers, will be able to continue deliveries throughout the war.

The reason: individual gasoline powered refrigeration plants installed on five trucks which makes each unit absolutely independent of "overnight charging" or electrical hookups at frequent stops.

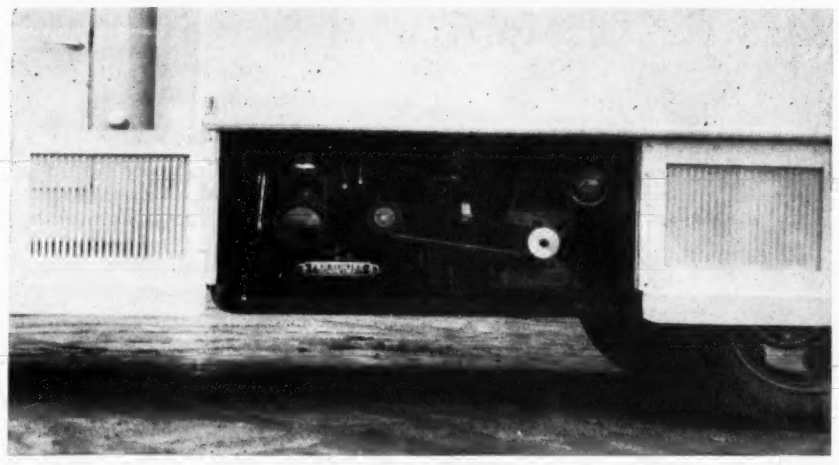
The Creamland Dairy Co., which distributes ice cream over a large New Mexico area, has used all types of truck refrigeration, including dry ice, ammonia systems, and holdover systems. Seeing the possibility, however, that such methods might be curtailed by the war, the management has converted its five "long-distance" trucks over to refrigeration plants which will operate either when the truck is standing still or in transit over the roughest of country roads.

A truck refrigeration compressor is installed on a specially-sprung metal shelf on the right side of each truck immediately behind the cab. Triple V-belts connected with a 1½-hp. gasoline motor located to the right in a similarly-sprung compartment, furnishes power for the compressor, and is equipped with an electric starter which makes it unnecessary for the driver to get out and start up the mechanism.

The compressor plant is connected to four cold plates in the ceiling of the 12 foot body, one of which can be switched off independently when less extreme cold temperatures are desired.

A separate gasoline tank for the small gasoline motor is provided, and the unit in test during hot summer weather has averaged only between 4 and 5½ hours a day of operation. Constant temperatures are thus maintained without regard to availability of electrical current, and a stock of spare parts and small motors will enable the dairy company to maintain proper refrigeration.

Gasoline Engine Hookup



Creamland Dairy Co. has installed gasoline-powered units in its trucks for cooling during the run.

'Package' Mechanism for Truck Cooling Developed

DENVER — A new "package truck" refrigeration mechanism for frozen food trucks and refrigerated transports has been developed by W. H. Anselm, refrigeration engineer here.

The truck unit is a 1½-ton arrangement, consisting of compressor and evaporative condenser enclosed in a steel box, with fan, coils, and pump on the top. Mounted on locking wheels, it can be rolled into the interior of large trucks, plugged into a generator, or power outlet, to refrigerate the interior to any temperature the driver desires.

Refrigerated Trailers Get Meat Delivered Faster & Better

CUDAHY, Wis.—Cudahy Brothers, meat packers, who ship many products to the army and to the workers in the munitions plants in Detroit and Toledo, have found that by the use of refrigerated trailers, from two to three days is saved on the haul, resulting in better meat and reduced cost of handling.

The principal use of the three stainless steel Fruehauf refrigerated trailers employed, is a three-times-a-week-run to Detroit, a distance of 396 miles and a once-a-week-run to Toledo.

Meat shipped by trailer arrives so much fresher and in so much better condition that there is a continually increasing demand for it, Cudahy officials declared. Costs of hauling by trailer in this manner are much lower than costs of a similar haul by rail, it is said.

Other savings result from the fact that products can be shipped in cardboard cartons by trailer, whereas by rail they must be boxed in wood. Return loads including such supplies as cartons, peppers, alkali, etc., are picked up with the trailer. The trailers are frequently used for deliveries for the Quartermaster Depot in Chicago and to various army posts.

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DAVISON'S
SILICA GEL
—USED IN ALL WELL-KNOWN DRYERS
YOUR JOBBER CAN SUPPLY YOU

WILL BUY ANY SURPLUS REFRIGERATION PARTS FOR CASH, ANY AMOUNT.
SEND LIST AND PRICES
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Help the Desk-man
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Specification
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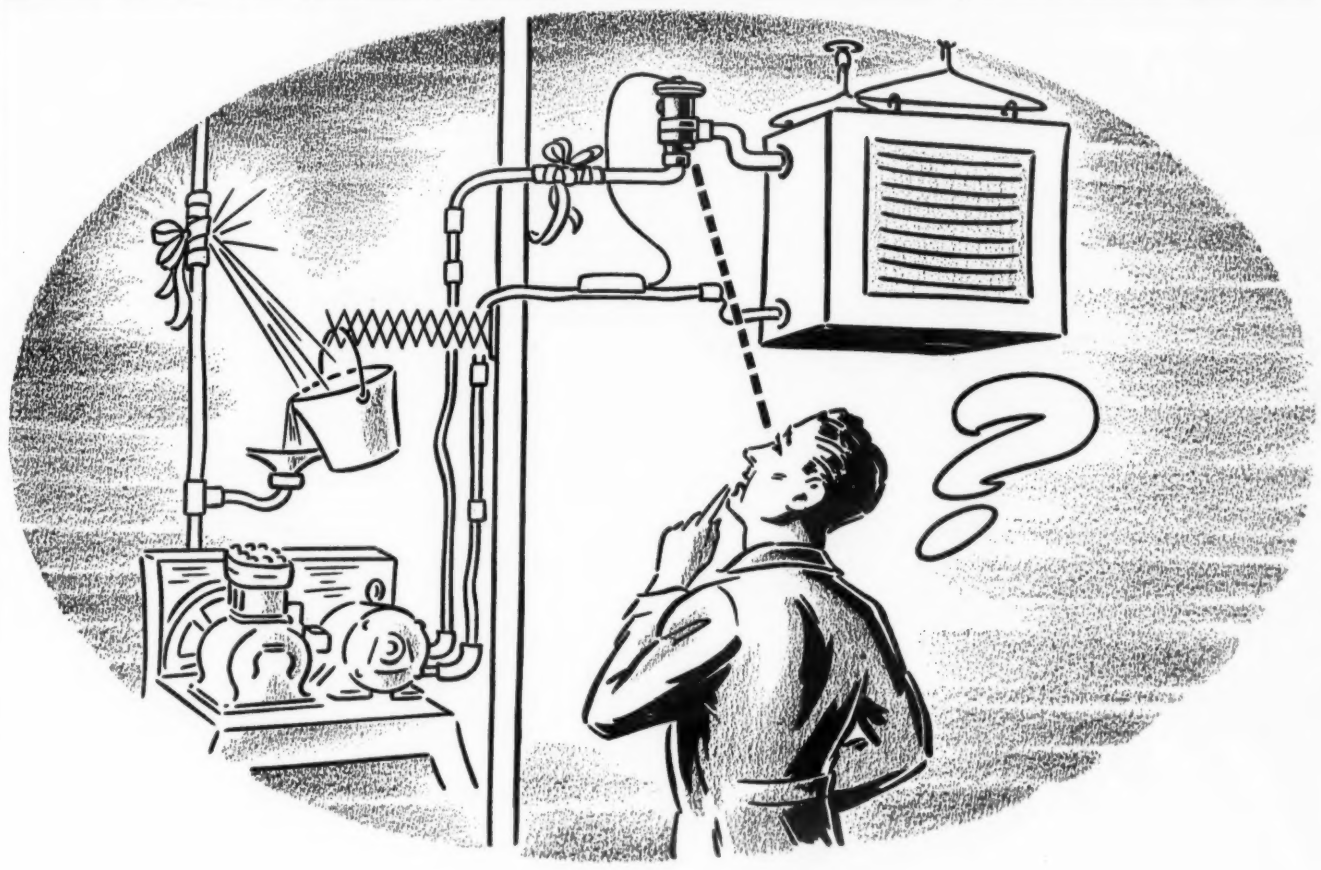
WOLVERINE
REFRIGERATION TUBE
WOLVERINE TUBE DIVISION
OF CALUMET AND HECLA
CONSOLIDATED COPPER COMPANY
1419 Central Ave. • Detroit, Michigan



It's Our Industry's Job to
KEEP 'EM REFRIGERATIN'
Regardless of Restrictions, Shortages, Hardships

The maintenance, in working order, of our Nation's existing refrigeration equipment is tremendously vital today. On this depends America's health and food supply. Under present conditions of material shortages, service men and dealers are performing "near-miracles" in keeping equipment running. Regardless of handicaps, we've got to "Keep 'Em Refrigeratin' " for the duration of the War.

The products of the air conditioning and refrigeration industry are widely used by the armed forces and in the production of war materials. We are a metal working industry—but so is the making of war materials.

As a result, it is the obligation of all of us—manufacturers, dealers, jobbers, and service men—to continue to use every ounce of ingenuity and resourcefulness to keep equipment in service regardless of war-imposed limitations.

To the extent that we are permitted, Alco will continue to supply essential parts. To aid you in your service problems, our experienced engineering and laboratory staffs are always available for consultation and advice.

ALCO VALVE COMPANY
2620 Big Bend Boulevard • St. Louis, Missouri

ALCO
Engineered Refrigerant Controls
THE STANDARD OF THE INDUSTRY

First of OPA's 'All Purpose' Rationing Books For Consumer Goes To Printer

WASHINGTON, D. C.—The first of the nation's "all-purpose" ration books, designed to provide a swift means for rationing any article or commodity almost at the instant the danger of a critical shortage appears, has been sent to the printer by the OPA.

The book is the first of four of its general type needed to provide ultimate complete flexibility in the rationing mechanism. It contains 192 coupons on eight pages, each page of separate color, and each coupon separately designated by number and letter. The design makes possible the use of the book for straight coupon rationing such as now used for sugar, or use of the point system whereby the consumer may "spend" his ration on various grades and kinds of a general type of commodity. The book is adequate for rationing of at least two major groups of commodities for a minimum of six months.

Work on the design of the other three books necessary to complete the rationing plan is underway and one of these may be put into production before the first is off the press.

One hundred fifty million of the new books will be printed to insure adequate supplies at all distribution points when they are handed over to America's 132,000,000 people. This distribution will take place as soon as the printing job is completed, probably shortly before Christmas.

The consumer will obtain his new book on the basis of his previous registration for War Ration Book No. 1, the sugar ration book. An adult representative of a family group may apply for books for all members of the family by presenting all the sugar ration books of that group. Consumers will retain their sugar ration books as their use will not be affected in any way by the new coupons.

Values will be assigned to the new books both as to commodity and unit value as new rationing programs are put into effect.

If, for example, meats should be the next generally rationed commodity, OPA, through appropriate official order, would validate one section of the book as the meat rationing coupons, at the same time publishing the exact regulations controlling their use. Subsequent rationing programs would be handled the same way.

The general plan of having four books to serve future general rationing purposes was arrived at after OPA officials became convinced that the printing and production problem involved would not permit putting all coupons in a single book for distribution within a reasonable time.

Specifically, the new book will be designated as "War Ration Book Two," book No. 1 having been issued for sugar. It measures about 4½ x 5½ inches, approximately the size of the sugar book, and has a heavy manila cover with coupons printed on safety paper to safeguard against counterfeiting.

Allwork Succeeds Timmis In WPB Plumbing Branch

WASHINGTON, D. C. — Resignation of W. Walter Timmis as Chief of the Plumbing and Heating Branch of WPB was announced last week by A. I. Henderson, Deputy Director General for Industry Operations.

Ronald Allwork, New York City, who recently had been appointed Deputy Chief of the Branch, was named Acting Chief.

Before joining the WPB, Mr. Allwork was a specialist in the preparation of specifications data for building products. He has been associated with many plumbing companies.

How To Manage a Plant's Salvage Campaign

A Director Is Essential; Simple Plan Is Best

A salvage program in a plant, factory, shop or yard, must be based on the fact that industrial salvage and conservation form the backbone of the War Production Board's campaign to put the nation's waste back into production. Unless American industries take on the major job of making broken down, dismantled or unusable materials available for scrap, the national supply of steel for manufacture of war equipment will be endangered.

Such factors as type of work and the size of plant, partially govern the organization of a company's salvage operations. But common methods of organization of a scrap campaign, collection, segregation and disposal, are available to all.

First, the organization to operate an effective salvage collection need not be elaborate or costly. It works best when it is simple and unencumbered with extra officials and unnecessary steps. An able executive of the company should head it up as Salvage Manager. He should work with superintendents and foremen in various departments. He must be armed with ample authority to make decisions to scrap unused material.

WHO REPORTS WHAT

To start the ball rolling, these men should make a survey of their departments and report to the Salvage Manager machines and equipment which are obsolete or out of active production. The Salvage Manager should make a written report of these findings, as a basis for action.

It is management's function to mark and send to the scrap heap equipment that is obsolete. After inspection, use this yardstick in coming to a decision: If a machine or other piece of equipment hasn't been used for three months, and if it can't be proved that it will be used in the next three, turn it over where it can be used . . . or scrap it. Either dispose of equipment in industry if there is a call for it, or put it to work as scrap for the weapons of war.

DISMANTLING SUPERVISION

Once such equipment has been marked for scrap, a responsible shop man should supervise its dismantling and classification. The assortment may be made to yield valuable replacement parts for machines in operation. Cutting down the need for purchasing new parts will remove the plant from the competition for equipment.

No salvage campaign can be successful without the whole-hearted cooperation of every person in the plant. Remember that even the most worthwhile cause needs the proper promotion to put it across. The battle for scrap to keep our production going is dramatic enough to put over with a bang. Stunts, posters, billboards and frequent mention in company publications or house organs are excellent vehicles for capturing and sustaining employes' interest in the program. In most plants, excellent talent can be recruited for this promotion from among the employes.

ENCOURAGE SUGGESTIONS

Workers should be urged to contribute suggestions and ideas for increasing salvage output. These may either be cleared through the foreman or written on slips and deposited in a suggestion box. Occasional rewards and incentives for outstanding cooperation in the salvage campaign will bring out employes' initiative. Workers can make or break a program. If their enthusiasm is enlisted and maintained, they will prove collaborators who will match the efforts of management.

Bins and containers — preferably displaying a poster or a slogan — should be placed in strategic spots throughout yards and plants. These serve as depositing places for production scrap, salvaged waste materials and contributions which workers bring from their home. Separate containers for different metals, rubber, twine, etc., will save time sorting the material.

Scrap is of use to the war effort in direct proportion to the speed with which it is gotten back into production. Arrange regular daily or bi-weekly schedules for the various departments and sources of supply. The Salvage Manager should see to it that collections are turned in on time to a central collection depot in the plant. Select a definite date each week for shipment to a junk dealer or have the salvage shipped by the company to the nearest collection point.

Remember that scrap bears no label. It is old jigs, dies, castings; or it is a 10-ton machine that can't be used. Waste metal, rubber, burlap and other critical materials are valuable even in small amounts. Every pound of these materials can be salvaged by industry for war work.

Treat the factory to a house cleaning. What was junk six months ago has its place in the war effort now. Sort rubbish carefully. Salvage what can be used, and burn or otherwise dispose of the real rubbish that cannot. Keep the premises clear of debris. This is the only method by which it can be made certain that there is nothing further to be salvaged.

Every bit as important as salvaging vital materials is the need to conserve what we have. Use less by making better use of what we have. Get this message across to the workers. It will benefit our sons and relatives in the armed forces. By preventing spoilage and breakage, the material we work with can be turned against the enemy.

In order to coordinate the salvage campaign in the individual plant with the national effort, it is essential that regular reports on the amounts collected, according to classification, be delivered to the Industrial Salvage Committee set up by the War Production Board in your community.

Above all, make clear to all personnel that until the day when we have actually turned out all the war equipment we need to smash the Axis, salvage and conservation are going to remain vital phases of our production.

10 SUGGESTIONS FOR GETTING OUT INDUSTRIAL SCRAP

1. Head up the campaign by appointing an able executive of the company, armed with authority to act.
2. Use posters, illustrations, pay-envelope stuffers, and all other publicity means to enlist all employes in scrap campaign.
3. Comb plant and yards for dormant scrap and unusable and abandoned equipment.
4. Survey all plant equipment, particularly idle, standing or discarded machines.
5. Classify and segregate scrap and supervise its handling.
6. Make each foreman responsible for preventing spoilage and waste in his department.
7. Report promptly equipment which is obsolete. If equipment has not been used in three months, and it can't be proved that it will be used in the next three, turn it over where it can be used . . . or scrap it.
8. Salvage usable parts from equipment marked for scrapping.
9. Speed return of scrap to mills and refineries through existing channels. Report regularly on collections of scrap to the Industrial Salvage Committee set up by the War Production Board in your community.
10. Enforce monthly re-checks in every department to find scrap material previously overlooked.

For: TRUCKS, LOCKERS, COOLERS, COUNTERS, CABINET CONVERSIONS, use:

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KOLD-HOLD MFG. CO.
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"The Logical Trend in Air-Cooled Condensers"

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Heat Transfer Products
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. . . Is Helping Him Fight!

● How well our armed forces fight depends upon how well and how fast we supply them with materials they need. We of Tecumseh Products, by employing these same precision methods used in maintaining the uniform high quality of Chieftain condensing units and compressors, have been able to meet and exceed the schedules required of us by the Ordnance Departments of both the Army and the Navy. We naturally feel proud of this accomplishment because we know that every time our production schedule is increased it is one more step towards Victory.

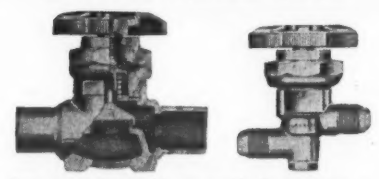
TECUMSEH PRODUCTS CO. TECUMSEH, MICHIGAN

Chieftain

Superior PRODUCTS ★ ★ ★
★ ★ ★ FOR YOUR Defense JOBS

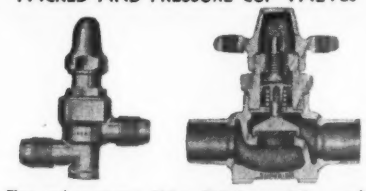
Increased refrigerated space for the accelerated production of perishable foods places a heavy responsibility upon the refrigeration industry. Shortage of metals condemns waste and inefficiency. Do your part to conserve materials. Design to produce more refrigeration per watt hour. Select equipment which requires a minimum of service. Specify SUPERIOR — the quality buy-word of the industry.

DIAPHRAGM PACKLESS VALVES



Entire internal assembly removable for soldering or inspection. Equipped with famous pressure cup below diaphragm. Two and three way. Flare sizes ¼" to ⅜"; Sweat sizes ¼" to ⅞".

PACKED AND PRESSURE CUP VALVES

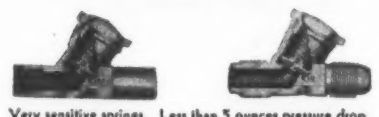


Flare and sweat sizes ¼" to ⅜" (two and three way) have hex seal cap. Sweat sizes ¼" to 2⅛" (globe) have wing nut seal cap. Internal assembly (all sizes) removable for sweating to valve body.

★ Refrigeration is Vitally Essential to Our National Defense Efforts ★

CUT OUT AND SAVE

CHECK VALVES



Very sensitive springs. Less than 3 ounces pressure drop. Positively will not chatter or hum. All internal parts easily removable for sweating or inspection. Sizes ¼" to ¾" Flare; ¼" to ⅞" Sweat.

LIQUID INDICATORS

With or without seal cap. Flare sizes ¼" to ⅝"; Sweat sizes ¼" to 1⅜". On ½" Sweat to 1⅜" entire upper assembly may be removed as a unit to facilitate soldering of refrigerant lines to connections.

★ Refrigeration-Food Preservation and National Defense are Synonomous ★

FOR FUTURE REFERENCE

DEHYDRATORS

Silica-Gel or Activated Alumina. Refillable and non-refillable. ½" to ⅜"; ¼ to 5 H.P.; 2 to 60 cubic inches.

MANIFOLDS

With packless or seal cap valves. Two to six valves; ¼" to 2⅛" valves, with or without end fittings. Sweat or flare.

FILTERS

Highly efficient sack type filter. Sizes ¼" SAE to ⅜" SAE. One to five horsepower.

★ Don't take chances with the Nation's Health -- do the best job possible ★

FITTINGS

Unions, adapters, elbows, tees, crosses, caps, etc. ⅛" through 1".

HEAT EXCHANGERS

Unique design gives highest capacity per unit size. Sweat or flare connections. 4200 to 9725 BTU per hour.

Combination Heat Exchanger and Accumulator. From one to ten tons. Especially recommended for low temperature installations.

FLARE NUTS

Brass and steel. Long and frost proof. Forged and bar stock.

For complete details—see your Jobber or write for catalog

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★ PITTSBURGH ★ PENNSYLVANIA ★

Text of Amendment No. 4 to Commercial Refrigeration Limitation Order L-38

Part 1071—Industrial and Commercial Refrigeration and Air Conditioning Machinery and Equipment.

(Amendment 4 to General Limitation Order L-38.)

Section 1071.1 **General Limitation Order L-38*** as amended, is hereby further amended as follows:

Subparagraph (1) of paragraph (b) **(Definitions)** is amended to read as follows:

(1) "Refrigerating and air conditioning equipment" means any type of machinery, equipment or other apparatus (except a domestic mechanical refrigerator as defined in paragraph (b) (2) of this order and except a domestic ice refrigerator as defined in paragraph (b) (3) of this order) which is primarily designed to lower the temperature of matter, or to lower the temperature or humidity, or both, of air, by mechanical, chemical or physical means, and includes all insulated enclosures, materials, parts, implements and devices included in the construction or assembly of such machinery, equipment or apparatus, or used therewith in causing it to perform its function of refrigeration or air conditioning.

Paragraph (d) (Restricting production of refrigerating and air conditioning equipment) is amended by adding thereto the following subparagraph:

(4) Notwithstanding the provisions of paragraph (d) (2) of this order, a producer may produce immersion (drop-in type) milk coolers for use on a farm in excess of the limitations established in such subparagraph of this order provided that nothing in this order shall be deemed to authorize the production of such milk coolers in excess of the limitations imposed by Limitation Order No. L-26 as amended.†

(c) Paragraph (e) (Restricting production and sale of specific items) is hereby amended to read as follows:

(e) **Production and sale of specific items.** (1) Notwithstanding the provisions of paragraph (d) (2) of this order, no producer shall produce any of the following equipment for any purpose:

(i) Self-contained or remote draft beer dispensers, including storage cabinets or water chilling devices, or both, which are a part of the dispensing system.

(ii) Carbonated beverage dispensers.

(iii) Bottled beverage coolers, whether of reach-in, counter or self-contained type.

(iv) Low temperature mechanical refrigerators having a net capacity of eight (8) cubic feet or less designed for the storage of frozen foods or for the quick-freezing of food.

(v) Self-contained air conditioners (room coolers), and window type air conditioners having a rated capacity of less than two (2) horse power or a refrigerating capacity of less than two (2) tons (American Society of Refrigeration Engineers' Specifications).

(vi) Soda fountains without facilities for bulk ice cream storage (fountainette type).

(vii) Florist boxes.

(viii) Ice cream cabinets which are not to be used aboard ship.

(ix) Non-mechanical water coolers (whether of the iced bubbler or bottled type) having an ice capacity of less than twenty-five (25) pounds.

(x) Evaporative coolers rated at 2,000 c.f.m. or less at the discharge side of the unit.

(xi) Refrigerated display cases of all types.

(xii) Low temperature mechanical refrigerators having a net capacity of more than eight (8) cubic feet but not over twenty-four (24) cubic feet to be used for the freezing and storage of food on a farm (Farm Freezers).

(2) Notwithstanding the provisions of paragraph (c) (1) of this order, no producer shall sell, lease, trade, lend, deliver, ship or transfer to any dealer or other authorized channel of distribution of refrigerating and air conditioning equipment, or to any other person, and no dealer or other authorized channel of distribution, or any other person, shall accept the sale, lease, trade, loan, delivery, shipment or transfer of, any of the items of refrigerating and air conditioning equipment listed in paragraph (e) (1) of this order or any ice cream cabinets which are to be used aboard ship, except:

(i) Items to be delivered to, or for the account of, the Army or Navy of the United States (including Army Exchanges, Naval Ship Stores, Officers' Messes and Officers', Non-Commissioned Officers' and Enlisted Men's Clubs), the United States Maritime Commission, the War Shipping Administration, the Panama Canal, or the Coast Guard:

(ii) Parts for emergency repair service; and

(iii) Those items of equipment listed in paragraph (e) (4) of this order.

(3) Notwithstanding the provisions of paragraph (c) (1) of this order, a dealer or other authorized channel of distribution (including a bottler of carbonated beverages and a manufacturer of ice cream for resale) of refrigerating and air conditioning equipment may sell, lease, trade, loan, deliver, ship or transfer to any person, and any person may accept the sale, lease, trade, loan, delivery, shipment or transfer of, any of the items of refrigerating and air conditioning equipment listed in paragraph (e) (1) of this order, except draft beer dispensers as defined in paragraph (e) (1) (i) of this order. This subparagraph (3) also applies to parts for emergency repair service of all items of refrigerating and air conditioning equipment listed in paragraph (e) (1) of this order, including parts for draft beer dispensers as defined in paragraph (e) (1) (i) of this order.

(4) Notwithstanding the provisions of paragraphs (c) (1) and (e) (2) of this order, a producer, dealer or other authorized channel of distribution may without restriction sell, lease, trade, loan, deliver, ship or transfer to any person, and install, and any person may accept the sale, lease, trade, loan, delivery, shipment or transfer and installation of any of the following equipment (as well as parts to be used for the emergency repair service thereof):

(i) Non-mechanical bottled beverage coolers of the ice chest type.

(ii) Refrigerated vegetable display cases.

(iii) Florist boxes, and florist display cases.

(iv) Single duty refrigerated display cases.

(v) Non-mechanical water coolers (whether of the iced bubbler or bottled type) having an ice capacity of less than twenty-five (25) pounds.

(vi) Vending machines as defined in Limitation Order No. L-27.‡

(vii) Low temperature mechanical refrigerators having a net capacity of more than eight (8) cubic feet but not over twenty-four (24) cubic feet to be used for the freezing and storage of food on a farm (farm freezers).

(viii) Immersion (drop-in type) milk coolers for use on a farm.

(d) Paragraph (k) **(Appeal)** is hereby amended to read as follows:

(k) **Appeal.** Any person affected by this order who considers that compliance therewith would work an exceptional and unreasonable hardship upon him, or that it would result in a serious problem of unemployment in the community or that compliance with this order would disrupt or impair a program of conversion from non-defense to defense work may apply for relief, on Form PD-520 if the provisions of paragraph (e) of this order are involved, or as to other provisions by addressing a letter to the War Production Board, setting forth the pertinent facts and the reasons why such person considers that he is entitled to relief. The Director General for Operations may thereupon take such action as he deems appropriate.

(P.D. Reg. 1, as amended, 6 F.R. 6680; W.P.B. Reg. 1, 7 F.R. 561; E.O. 9024, 7 F.R. 329; E.O. 9040, 7 F.R. 527; E.O. 9125, 7 F.R. 2719; sec. 2 (a), Pub. Law 671, 76th Cong., as amended by Pub. Laws 89 and 507, 77th Cong.)

Issued this 26th day of September 1942.

ERNEST C. KANZLER,
Director General for Operations.

* 7 F.R. 3662, 4569, 5297.
† 7 F.R. 5396, 6148.
‡ 7 F.R. 118.

Priority Aid on Radio Parts Gained with PD-1X

WASHINGTON, D. C.—Distributors Branch of WPB ruled Sept. 22 that priority assistance in the purchase of radio shop material for the maintenance of home radios may be applied for on Form PD-1X by distributors and dealers who buy directly from manufacturers.

Preference ratings will be assigned only to items necessary to the functioning of receiving sets. Non-essential radio gadgets and phonograph parts will not be rated on Form PD-1X, nor will repair parts for Army, Navy, and other government-owned radios.

Wilson of G-E Heads WPB Production

(Concluded from Page 1, Column 3)

man Owen D. Young and Honorary President Gerard Swope were requested to resume their original responsibilities, Mr. Young as acting chairman and Mr. Swope as president of the company.

President Roosevelt, in approving the appointment, said that he was very happy to know that Mr. Wilson had been given a vice chairmanship of the WPB, and added:

"I have always considered Mr. Wilson one of the ablest production executives in the country, and he has done an outstanding job in the production of war materials."

Of Mr. Wilson's appointment Bernard M. Baruch is declared to have said: "Now American industry will have a chance to show what it really can do."

Mr. Nelson disclosed that he formed the Production Executive Committee to bring together top officials in the WPB and the Armed Services, to maintain a constant check and control on the production program. This committee will meet twice weekly, under the chairmanship of Mr. Wilson. Its other members will be: Lieut. Gen. Brehon B. Somervell, Commanding General, Service of Supply; Major Gen. Oliver P. Echols, Commanding General, Material Command, Army Air Force; Vice Admiral Samuel M. Robinson, Director of Material and Procurement, U. S. Navy; Rear Admiral Howard L. Vickery, Vice Chairman, U. S. Maritime Commission.

In other WPB changes Ferdinand Eberstadt, chairman of the Army-Navy Munitions Board, was named to handle scheduling and materials as chief of the requirements committee. He relieves in this capacity James S. Knowlson, who will devote his full time to the general task of integrating the American and British production and supply programs.

Ernest Kanzler of Detroit, whose appointment as Director General for Operations of WPB was announced earlier in the month, will direct the operations, particularly the priorities system, with his function as No. 1 trouble shooter taken over by Wilson.

Restriction Lifted on Gas Unit Heaters

(Concluded from Page 1, Column 3)

other WPB orders affecting distribution and operation of the heaters, it is not expected that today's action will make heaters available to anyone but the armed forces and war plants.

Part 3023—Oil and Gas Burning Domestic Space Heaters
Amendment No. 1 to Limitation Order No. L-173

Subparagraph (a)(1) of section 3023.1 (General Limitation Order No. L-173) is amended to read as follows:

(1) "Domestic space heaters" means any device (except electric) for the direct heating of the space in and adjacent to that in which the device is located, designed for use without heat distribution pipes or ducts as integral parts of such heating devices, and includes but is not limited to circulating heaters, radiant heaters, floor furnaces and wall furnaces; provided, that "Domestic space heaters" does not include direct fired gas unit heaters.

An efficient dryer makes a world of difference in the service a refrigeration system gives. Trouble with frozen valves is avoided. Wear is reduced and corrosion prevented. Alorco Activated* Alumina is that kind of dryer.

To a nation at war, it is vital today for the serviceman to anticipate and prevent refrigerator shutdowns. Cartridges and dehydrators charged with Alorco Activated Alumina, inserted in the refrigerator lines you service, keep the refrigerant DRY, clean and free from acid. They help you head off trouble.

Activated Alumina removes every trace of moisture, to dew points below —110° F. It also removes acid and sludge. Dehydrators and cartridges charged with this efficient, dependable drying agent can be obtained through your supply house.

Be sure to ask for genuine Alorco Activated Alumina. ALUMINUM COMPANY OF AMERICA (*Sales Agent* for ALUMINUM ORE COMPANY) 1908 Gulf Building, Pittsburgh, Pennsylvania.

These manufacturers supply cartridges and dehydrators charged with Activated Alumina:
American Injector Company . . . Fedders Mfg. Company . . . Henry Valve Company . . . Imperial Brass Mfg. Company . . . Kerotest Mfg. Company. . . McIntire Connector Company . . . Mueller Brass Company . . . Cyrus Shank Company.

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Gilmer Plan Offers Specific Ways To Power-Recovery Plan In Industry

PHILADELPHIA — L. H. Gilmer Co., rubber fabric belt manufacturer, this summer launched a new and far-reaching plan to conserve power. It is being offered without cost to all industrial plants as a practical aid to America's war effort.

Leading power engineers say that the Gilmer "National Power-Recovery Plan" can increase war production tremendously through giving to industry power equivalent to that generated by two Boulder Dams, and now going to waste.

At a meeting in New York, John S. Krauss, Gilmer president, addressing prominent editors and publishers, declared that the amount of power being needlessly wasted is astounding. And it is significant, he continued, that simply through betterments mostly resulting from more careful engineering, a sufficiently large proportion of it is savable to equal 17-billion horsepower hours per year.

Specifically, the Gilmer "National Power-Recovery Plan" provides a method for bringing power leaks out into the open and spotlighting them; for focusing executive attention on the waste involved; for crystallizing the whole power leak picture, and for securing the necessary action to get the waste reduced in the locations where this is the most feasible, viz.—where the betterments promise the most power-saving in comparison with the cost and time involved, and with a minimum use of material.

Briefly, the Plan is designed to cut red tape, and to produce results. A book has been prepared for industrial executives which describes the workings of the Plan in A.B.C. terms.

As examples of some of the things that can be done to save power and power producing factors, Gilmer lists the following:

Capacitors and other devices can easily raise the power factor at least 10% in most plants, thereby increasing the actual power-delivering capacity of plant transformers and wiring.

Where water is a costly item, you can generally cut consumption at least 10% merely by metering the consumption of each major department—and charging for the amount used.

Standard thick magnesia or mineral wool heat insulation, applied to 100 feet of bare 6-inch pipe carrying steam at 100 lb. pressure, will save 50 tons of coal per year.

Among the hundreds of ways in which power savings can be made are correct shafting alignment; correct belt tensions; scheduled maintenance of steam traps; use of instruments; reducing size of motor on loads; checking motor clearances, proper lubrication, etc.

Power-recovery estimators are a prime feature of the plan. These estimators have been ear-marked for specific services, namely—electricity, mechanical transmission, steam, hot and cold water, compressed air, refrigeration, boiler room, prime movers, and power miscelleaneous. They are intended for the use of the plant engineer or other personnel who have the technical responsibility for the power services in a plant.

The estimator is a form for the men to follow in listing (1) the location of the power losses that can be most easily converted into use, (2) the corrections which are necessary, (3) the estimated time needed to make each correction, (4) whether the materials required to make the correction are available, and (5) the approximate cost of the corrections.

In a section on "Typical Ways to Save Refrigeration in the Plant" the Gilmer plan book says:

Hold head pressure down. If head pressure exceeds saturation pressure for a temperature more than 5° F. to 10° F. higher than condensing-water temperature, check condenser surfaces to be sure they are clean, and make sure that flow of condensing water is ample and evenly distributed in condenser. Purge non-condensible gases regularly, either manually or, better still, by an automatic purger. Keep condensing-water temperature as low as possible. Result: Approximately 10% can be saved in compression power for every 20-pound reduction in head pressure.

Raise suction pressure and reduce temperature. Keep evaporators defrosted and suction piping free of oil and scale to permit operating at higher suction pressure (a 5-pound increase in suction pressure means about a 10% saving in power). Watch temperature at compressor suction, superheat reduces weight of gas handled and means less refrigerating effect for a given amount of compressor work. High superheat may indicate leaky suction valves. Be sure cylinder cooling is adequate, that there is ample flow of low-temperature water. Result: The correction of faulty suction conditions can save 10 to 25% in compressor power.

Save heat units throughout system. Keep temperature rise between condenser and expansion valve to a minimum by insulation on lines and receiver. Always insulate receiver if it stands in a hot engine room or outdoors exposed to hot sunlight. If possible, run long liquid and suction lines together.

Valueless high-temperature water may be used to remove superheat from high-pressure gas leaving the compressor, reducing load on condenser. If cold water is available, subcool liquid from condenser to increase refrigerating effect without adding to compressor work. In plants operating at two suction pressures, vapor at high suction pressure may be used to cool liquid and superheat may be taken from gas between stages by bringing it in contact with liquid so that a portion of the liquid flashes to vapor, absorbing heat in the process. Result: A 5 to 20% saving in power can be attained by applying some or most of these B.t.u.-saving methods.

Reduce refrigeration loads. Control refrigeration use to the minimum needed for each job. Consider eliminating non-essential refrigeration services if drastic action is needed. Where possible, cut off refrigeration loads during peak periods or install storage equipment to supply refrigeration over the peak. Be sure air conditioning controls are set at comfort minimums and that they function at all times. Reduce cooling load by eliminating excessive losses caused by lack of insulation, by opening of doors and windows, by heavy heat loads added by use of high-wattage incandescent lamps instead of fluorescents, and by failure to provide shade against strong direct sunlight. Result: Reducing refrigeration loads saves power. Shifting loads from peak periods increases electric service capacity.

Plastic Tubing Is Easily Handled and Worked In Field Operations

Some steps in preparing plastic tubing for use with flare fittings. (Upper left) Trimming the tubing. Note use of conventional tool. (Upper right) Applying pressure to flare the tubing. (Lower right) The finished flare, with fitting also made of plastic.

* * *

(EDITOR'S NOTE: There has been considerable discussion both written and oral about the use of plastic tubing in refrigeration work. Thus far, there has been no widespread application of the tubing as a refrigerant carrier.

It has proved itself as a hollow conductor for water, and beverages. The following material on the working and handling of the tubing was prepared by C. B. Branch and D. L. Gibb of the plastic sales division of the Dow Chemical Co.)

One type of plastic tubing now being produced by a number of licensed fabricators throughout the country is a thermoplastic formed by the copolymerization of vinylidene and vinyl chlorides.

This plastic is particularly suited for tubing because of its relatively sharp melting point and resultant retention of physical properties within the service temperature range. Another advantage is its comparatively high bursting pressure.

This tubing may be joined by some of the types of connectors commonly employed with metal tubing. These include flared, compression, welded, and flanged fittings. For the smaller sized tubings now available, flared types are very satisfactory. The flaring can be accomplished at room temperature with compression type flaring tools, or by spinning.

If the tubing is cold, it is recommended that the end of the tubing and the flaring tool be heated to room temperature before flaring is attempted. (In an experimental setup by an air conditioning contractor, the tubing was heated to 100° F. by dipping it into warm water before flaring, and this was found to give good results.)

Any necessary trimming may be done with a sharp cutting tool or file.

Flare fittings made from injection molded plastic are also available. These fittings are slight modifications of the standard SAE fitting designs, and have the advantage of providing a plastic seal between the tubing and the fitting. This combination eliminates possibility of leakage due to unequal thermal expansion of tubing and fittings and provides for uniform chemical resistance.

In bending the tubing at room temperature, the tendency to kink decreases with increasing wall thickness. At a wall thickness equal to 20% or more of the diameter of the tubing, it is extremely difficult to kink or collapse. Even in those cases where actual kinking or total collapse occurs, the bursting pressure is reduced no more than 20%.

Fabrication such as bending or forming to permanent desired shapes is easily accomplished. The tubing is formed at room temperature to the required shape plus allowance for 20 to 30% springback. It is then heated to approximately 212° F. for 15 to 30 seconds and on cooling will be set to shape. The heating in this procedure may be easily and conveniently obtained with boiling water or atmospheric steam.

Without internal support, this tubing can be permanently bent without kinking on a radius as small as three to six times the diameter of the tubing. Bends can be made to an inside radius as small as one-half the diameter of the tubing by use of the same technique, but with the addition of an internal fluid. By this method it is possible to fabricate shapes such as elbows, traps, nozzles, etc., where a permanent set is necessary.

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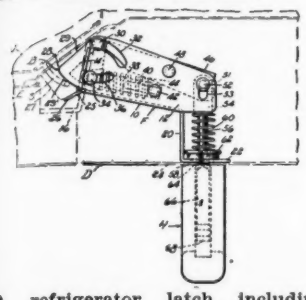
PATENTS

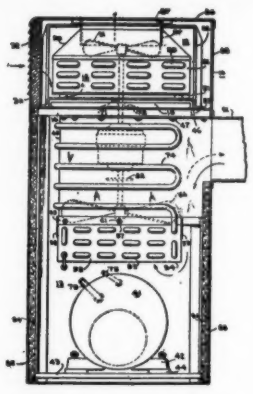
Weeks of Aug. 25 And Sept. 1

2,293,700. REFRIGERATOR LATCH. George E. Curtiss, Jr., New Britain, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut. Application Sept. 13, 1940, Serial No. 356,575. 5 Claims. (Cl. 292—220.)



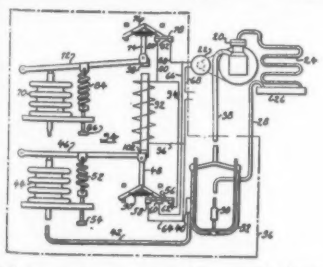
5. A refrigerator latch including a frame, a latch bolt pivotally supported about both of two spaced pins, said frame having spaced walls movably supporting each of said pins for transverse movement relative to said frame in oppositely disposed slotted guideways, each pair of guideways being concentrically curved relative to the pin supported in the opposite guideway, movable abutment means engaging and preventing transverse movement of one of said pins and permitting pivotal movement of the bolt about said pin, manually operable means for disengaging said movable abutment, means to permit transverse movement of said first pin and pivotal movement of the bolt about the second pin, and a spring resiliently opposing movement of said first pin when said abutment is disengaged therefrom.

2,293,718. AIR CONDITIONING APPARATUS. Arthur H. Eberhart, Springfield, Mass., assignor to Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Oct. 12, 1938, Serial No. 234,511.



1. In a unit air conditioner, the combination of a housing, a partition providing an evaporator compartment and a machine compartment in the housing, an evaporator disposed in said evaporator compartment, partition means in said machine compartment including opposed vertical wall portions and forming an air passage in said machine compartment between said opposed vertical wall portions, said housing having an outlet opening adjacent the upper end of the machine compartment and communicating with the upper end of said passage and inlet openings disposed on opposite sides of the outlet opening and communicating with the upper end of the machine compartment outside of said passage, a condenser and a compressor disposed in said machine compartment, and air translating means disposed in said machine compartment and effecting flow of air inwardly through said inlet openings, downwardly through the machine compartment outside of said air passage, through said passage, and outwardly through said outlet openings, said air also flowing in contact with the surfaces of said condenser.

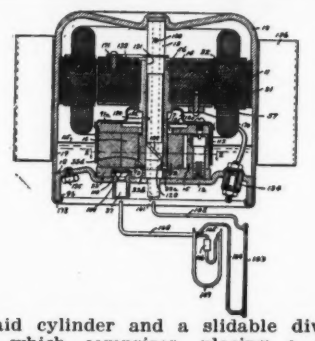
2,294,028. REFRIGERATING APPARATUS. Albert O. Grooms, Dayton, Ohio, a corporation of Delaware. Application July 7, 1938, Serial No. 217,928. 19 Claims.



1. Refrigerating apparatus including a means to be cooled, a cooling unit for cooling said means, and a refrigerating supply means for supplying refrigerating fluid to said cooling unit, a control means for controlling the supply of refrigerating fluid to said cooling unit, said control means including an actuating means containing a volatile liquid, said actuating means including a portion in heat exchange relation with said cooling unit, said actuating means being substantially filled with said volatile liquid in its liquid phase, said actuating means having a second portion containing a free liquid surface of said volatile liquid where the volatile liquid can vaporize and where the vapors can collect, said second portion being located in heat exchange relationship with said means to be cooled.

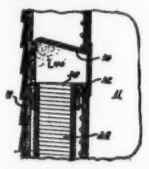
2,294,037. METHOD OF MAKING MOTOR-COMPRESSOR UNITS FOR REFRIGERATION. Andrew A. Kucher, Dayton, Ohio, assignor to General Motors Corporation, Dayton, Ohio, a corporation of Delaware. Original application April 30, 1937, Serial No. 139,989. Divided and this application June 28, 1939, Serial No. 281,862. 2 Claims. (Cl. 29—156.4.)

2. The method of assembling a slotted rotary compressor cylinder, an end wall



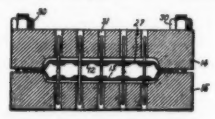
for said cylinder and a slidable divider block which comprises, placing a temporary spacing block in the slot, clamping the temporary spacing block in place so as to maintain the dimensions of the slot opening correct, positioning the cylinder on the end wall, fixedly securing the cylinder in place on the end wall while the temporary block is in place and then removing the block and replacing the temporary spacing block with a slidable divider block.

2,294,038. AIR DISTRIBUTING MEANS FOR AIR CONDITIONING APPARATUS. Andrew A. Kucher, Dayton, Ohio, assignor to General Motors Corporation, Dayton, Ohio, a corporation of Delaware. Application Sept. 20, 1939, Serial No. 295,793. 3 Claims. (Cl. 98—33.)



1. Air conditioning and distributing apparatus adapted for installation in existing hollow wall buildings having a plurality of rooms to be conditioned comprising in combination, a central air conditioning unit, a conditioned air outlet in each room, means for conveying high velocity conditioned air from said unit through the hollow walls to each of said outlets, each of said last named means comprising a substantial circular flexible duct means adapted to be snaked from said unit through the hollow portion of the walls of said building to one of said outlets, and sound deadening means within the hollow portion of said wall adjacent said air outlet comprising a non-metallic end cap having an opening communicating with said outlet and having an upper inner corner extending beyond the upper edge of said opening and containing sound deadening material.

2,294,137. HEAT EXCHANGER. Warren A. Spofford, Glen Ridge, N. J., assignor to General Electric Company, a corporation of New York. Application April 25, 1941, Serial No. 390,363. 5 Claims.

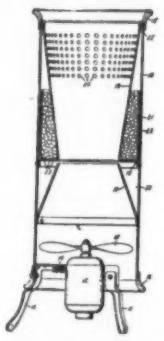


1. The method of forming heat exchange elements of the type having a relatively thin-walled conduit with members disposed internally thereof and serving not only to transfer heat between a fluid flowing in said conduit and the conduit walls but also to reinforce the conduit walls, comprising the steps of spacing two conduit wall members nearer together than ultimately desired, providing heat transfer elements of a material having relatively good heat conductive properties and which is weakened by annealing between said walls, securing said elements to said walls at a temperature above the annealing temperature of said material, securing together adjacent marginal edges of said walls to provide a fluid-tight fluid conveying tube and moving apart said wall members into the ultimately desired positions at a temperature less than the temperature of recrystallization of the material of said elements thereby cold working said elements by stretching whereby said elements are strengthened.

2,294,155. REFRIGERATOR SHELF. Edwin H. Boddy, Erie, Pa., assignor to General Electric Company, a corporation of New York. Application July 16, 1940, Serial No. 391,503. 8 Claims. (Cl. 183—35.)

7. A shelf comprising a pair of spaced-apart article supporting end sections having unsupported portions and a removable center section, and means for supporting position including means having supporting engagement only with substantial portions of the front portion of said removable section and the front portions of said unsupported portions of said end sections, thereby reenforcing said shelf when said center section is in place.

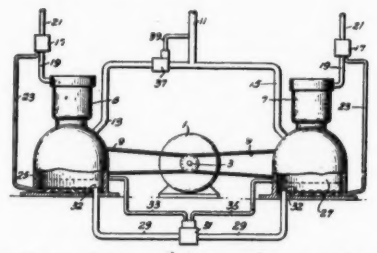
2,294,183. AIR TREATING AND CIRCULATING APPARATUS. Osmund Holm-Hansen, Bridgeport, Conn., assignor to General Electric Company, a corporation of New York. Application May 2, 1941, Serial No. 391,503. 8 Claims. (Cl. 183—35.)



1. An air circulator including a casing having an air inlet and an air discharge outlet, means for circulating air through said casing from said inlet to said outlet, means dependent upon the flow of air through said casing for producing a

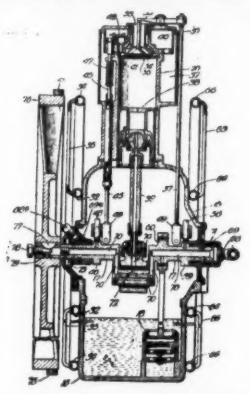
pressure of the air at an intermediate portion of the casing lower than the pressure at the discharge end thereof, means providing a chamber for containing an air treating substance, and means arranged to utilize the difference in pressure between the discharge end of said casing and said intermediate portion thereof to produce a circulation through said chamber of a portion of the air flowing through said casing whereby said portion of the air is removed from the main stream of air flowing through said casing and circulated through said chamber and treated by the substance therein and then returned to main stream of air.

2,294,552. REFRIGERATING CONDENSING UNIT. Ernest Gygax, St. Louis, Mo., assignor to Curtis Manufacturing Company, Wellston, Mo., a corporation of Missouri. Original application May 13, 1937, Serial No. 142,395. Divided and this application Sept. 26, 1939, Serial No. 296,636. 3 Claims. (Cl. 184—103.)



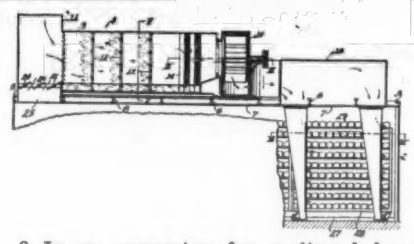
1. In a device for insuring a safe oil level in each of the crankcases of a plurality of interconnected compressors, an oil reservoir, a fluid passage between said oil reservoir and each of the crankcases of the compressors, each of the said fluid passages having one of its ends in communication with the oil reservoir and its other end extending into the crankcase of one of the interconnected compressors, said end of the fluid passage that extends into the crankcase of one of the compressors being positioned a short distance above the bottom of the said crankcase, and being adapted to cooperate with the crankcase to maintain a safe oil level in the bottom of the crankcase at all times, and means responsive to the level of the contents in the oil reservoir to vary the passage of a fluid through one of said fluid passages.

2,294,619. REFRIGERATING APPARATUS. Edward L. Kastler, Racine, Wis., assignor of one-half to Paul S. Mantonya, Chicago, Ill. Application Dec. 20, 1940, Serial No. 371,014. 8 Claims. Cl. 62—136.)



6. In a refrigerating system using air as a refrigerant, means for controlling the passage of air through the system comprising valve means, a drive shaft and operating connections from the shaft to the valve means, in combination with means for removing water from the air and means for conducting said water to the shaft and operating connections to lubricate the same.

2,294,780. APPARATUS FOR COOLING BAKERY PRODUCTS. Frederic D. Pfening, Columbus, Ohio. Application April 15, 1939, Serial No. 268,141. 6 Claims.



2. In an apparatus for cooling bakery products of the type having an enclosure provided with receiving and discharge ends, cooling means for said enclosure comprising a plurality of transversely spaced vertically extending ducts positioned adjacent the discharge end of said enclosure, said ducts having outlet openings substantially throughout their full length, said openings facing the discharge end of said enclosure, and air conditioning means for feeding cool air under superatmospheric pressure into the upper ends of said ducts, said enclosure having an air exhaust opening adjacent its receiving end.

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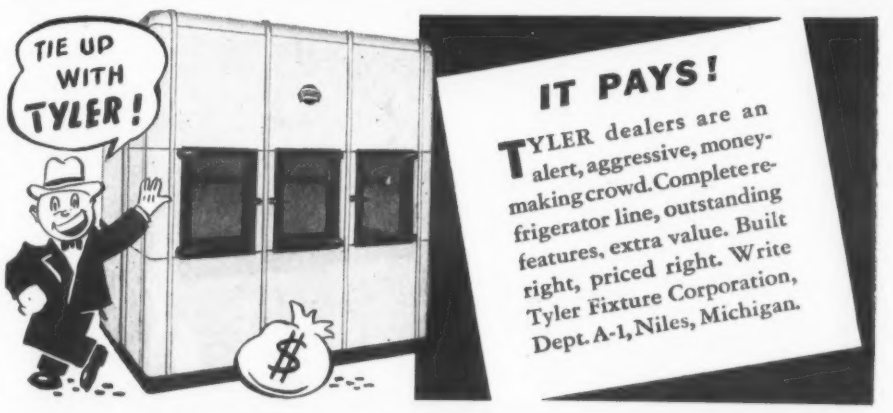
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Return of Cylinders For Refrigerants Is Urged Again

WILMINGTON, Del. — Limitation Order L-197, which prohibits the use of new or second hand steel shipping drums for 200 types of products, does not apply to pressure cylinders in which refrigerant is transported, reports R. J. Thompson, engineer for Kinetic Chemicals, Inc.

Nevertheless, Mr. Thompson points out, the priorities situation is such that it is virtually impossible to get new cylinders for civilian use, and the shortage of cylinders generally continues to be critical.

Steel mills are not delivering plate to pressure cylinder manufacturers on orders rated lower than AA-1 and no AA-1 ratings are passed by the Army and Navy Munitions Board except that they are for delivery directly to the Army, Navy, Maritime Commission, etc.

The curve of empty cylinder returns is constantly falling; furthermore, there is practically no chance of procuring a rating from WPB with which to make up losses on cylinders, Mr. Thompson asserts.

Another campaign aimed to insure the return of empty cylinders and to plug the holes through which cylinders are lost to civilian service is necessary immediately, declared Mr. Thompson.

It is to the advantage of the reseller to return empty cylinders at this time, he said, for a checkup by the WPB will probably start in a very short time and if a reseller is a flagrant offender in the matter of returning cylinders, it is likely that measures will be instituted by WPB which will add greater complications to the distribution of refrigerant.

Benn Is Chief Engineer For Globe Hoist Co.

PHILADELPHIA — Stephen J. Benn, formerly mechanical engineer with the Brunner Mfg. Co., has recently been appointed chief engineer of the Globe Hoist Co., here, manufacturer of automotive hoists and accessories.

'Evasions' of Used Refrigerator Price Law Described

(Concluded from Page 1, Column 4)

the other was in the same racket.

Buyers who have been overcharged are being quick to take steps to get a return of their money, and the "ambulance chasing" type of lawyer is looking forward to ceiling price violations as a fertile field, say OPA officials.

Declaring that "ignorance and failure to find out all about the law will no longer excuse the dealer," the OPA warns the dealer to be careful about doing the following things, which may constitute evasions and thus violation of the law:

In the rental of refrigerators, any type of agreement in which the title would pass to the customer (if his payments exceeded the ceiling price) or a "guarantee not to repossess" on the part of the dealer, is an evasion of the law. The transaction then becomes a time-payment sale.

Sale of the refrigerator by a dealer under the pretense that it is being sold by an individual not bound by the law is a clear violation of the law. Violation would also be charged where it was proved that a dealer sold the used refrigerator to a "dummy" or agent at the ceiling price, and such agent sold it to another buyer at a much higher price, returning the profit to the dealer.

In cases in which the used refrigerator is sold "as is," and then later reconditions the same refrigerator for a large sum, the circumstances will determine whether or not there has been a violation. If the dealer makes it clearly understood that the buyer can have the refrigerator reconditioned any place, then it is not a violation. But if the reconditioning is a condition of the sale or a "tying" agreement, then it is a violation.

"Combination sales" in which the purchaser is forced to buy other merchandise he may not want in order to get the refrigerator is a violation even if ceiling prices were paid for all the articles.

The additional charges which are permitted in section "C" are allowable only where the refrigerator is (which section covers cases wherein priced under the conditions specified in section "C" of Price Order 139 the price cannot be determined by the methods described in sections "A" and "B.") The additional charges cannot be added when the used box can be priced under the "A" or "B" formula.

In the case of used 1941 or 1942 refrigerators it is incumbent upon the dealer to find out the original list price of the particular model when it was new, and then to charge no more than 70% of that list price.

Where new refrigerating units or systems are placed in old cabinets, the dealer should play safe by getting a ruling from the nearest OPA offices on how to establish a ceiling price for such refrigerators.

Dealers and rebuilders must comply with the exact terms of the reconditioning steps as established in the order. They will not be allowed to substitute their own ideas, and then to self-evaluate what their reconditioning work is worth.

Wartime Demands for Refrigerated Space Taxing Facilities

(Concluded from Page 1, Column 3)

more efficient and economical handling and distributing.

The ODT appealed for cooperation from shippers and carriers, urging that back-hauls, cross-hauls, and all unnecessary shipping or trucking be avoided and that storage business be placed most effectively in relation to the warehouse space and transportation involved.

Citing war-born factors which have intensified cold storage problems, the ODT reported an increase in the production of perishable foods to meet military, civilian and lend-lease requirements. Simultaneously the scarcity of tin has curtailed preservation by canning, and lack of building materials has made impossible the construction of additional warehouses. Peak holdings in excess of five billion pounds of food products are protected.

Another factor listed by the ODT is the tremendous expansion of the egg drying industry, with a resultant hike in demands on refrigerated storage space for eggs, both shell and frozen. Dried eggs, formerly stored without refrigeration, now for the most part are kept in coolers for better preservation of quality.

Government agencies now are the principal buyers and storers of both raw and processed food products, the ODT pointed out. The uncertainty of the rate at which food can be shipped by the United States government to its fighting Allies injects another complicating factor.

To provide additional storage facilities in coastal areas for military uses, transcontinental railroads have broadened their storage-in-transit privileges to include frozen fruits and vegetables originating on the Pacific Coast. This arrangement, permitting frozen fruits and vegetables to be forwarded for storage at interior points in the western, southern and eastern territories, has helped prevent much of the congestion at coast points which would have resulted from military demands.

The ODT pointed out that war conditions have greatly accelerated the trend of demand from cooler space to freezer space. Preservation by freezing has come into increasing use as the result of developments in freezing and storage methods.

Officials described as disappointing the results of ODT's appeal some months ago for the conversion of 11,500,000 cubic feet of cooler space to freezer space in refrigerated warehouses. Only about 35% of this conversion has been effected.

'Cold' Anesthesia Technique Seen as Great Aid In Treating Wounded

(Concluded from Page 1, Column 5)

man pointed out, "are not made stiff, and there is no danger of frost-bite. Any level of temperature down to the freezing point is harmless, and a temperature of 5° centigrade is conservative and effective.

"The principle of refrigeration for surgical anesthesia," said Dr. Crossman, "is very simple; namely, cold nerves cannot transmit impulses, and cold tissues cannot respond with shock or any other harmful reaction. Our experiments have demonstrated that there is no injury from the low temperature.

WOUNDS HEAL BETTER

"The wounds heal better after the refrigeration technique has been used than after other methods of operation.

"Sufficient chilling of the skin alone, may produce enough anesthesia for superficial operations such as skin grafting," continued Dr. Crossman. "For deeper operations and amputations, there must be added to the refrigeration procedure the use of a tourniquet. It helps effectively to isolate the limb, even though the organic connection is retained.

"The stoppage of circulation by the tourniquet must be complete," said Dr. Crossman, "in order that the flowing blood shall not carry warmth into the limb which must be chilled, or carry cold to the rest of the body which must be kept warm."

Dr. Crossman said that the time required to produce sufficient refrigeration for anesthesia depends on the thickness of the limb, the shortest time ordinarily employed for a foot or calf being one hour and the longest time for a thigh being 2½ to 3 hours.

He declared that the technique, because of its discouragement of infection and little loss of blood, makes it unnecessary in many cases to amputate as far up on the leg as previously has been required.

"High thigh operations at City Hospital in New York," he asserted, "are practically obsolete."

AVOIDS SEDATIVES; NO AFTER-EFFECTS

The chilling of the stump of the leg to a lesser degree after the operation obviates pain during convalescence, said Dr. Crossman, so that sedatives are seldom needed.

There is absence of thrombosis or embolism and no gastro-intestinal or systematic disturbances in any of the cases on which the method has been used to date, he testified.

OLD PATIENTS SURVIVE

"Previously most of the old patients in municipal hospitals who had gangrene died," stated Dr. Crossman. "Now most of them live."

"There is no other technique so free of complications as refrigeration anesthesia," said Dr. Crossman.

"I hope," Dr. Crossman concluded, "the method will prove a real and permanent contribution to military surgery."

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FOR SALE: One 10-ton Frigidaire Compressor No. 640-128-CWC, with 10 hp.—1750 rpm—3 Phase—220/440 Volt Delco Motor, two gas cylinders attached. Excellent condition. BUILDERS SUPPLY & COAL CO., 1281 Haywood Rd., Asheville, N. C.

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The Bush Mfg. Co. Bulletin

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